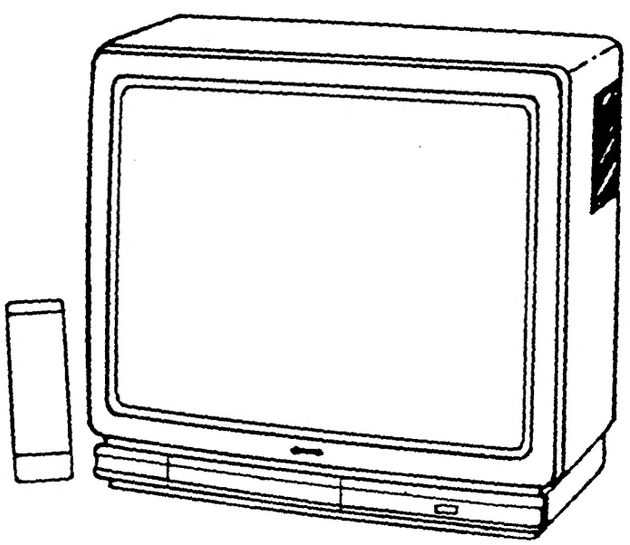
AKAI

SERVICE MANUAL Colour Television

Model No. CT-2158
CT-2160

Service Ref.No. CT-2158-00
CT-2160-00



Contents

PRODUCT CODE
113 077 04 (CT-2158)
113 077 05 (CT-2160)

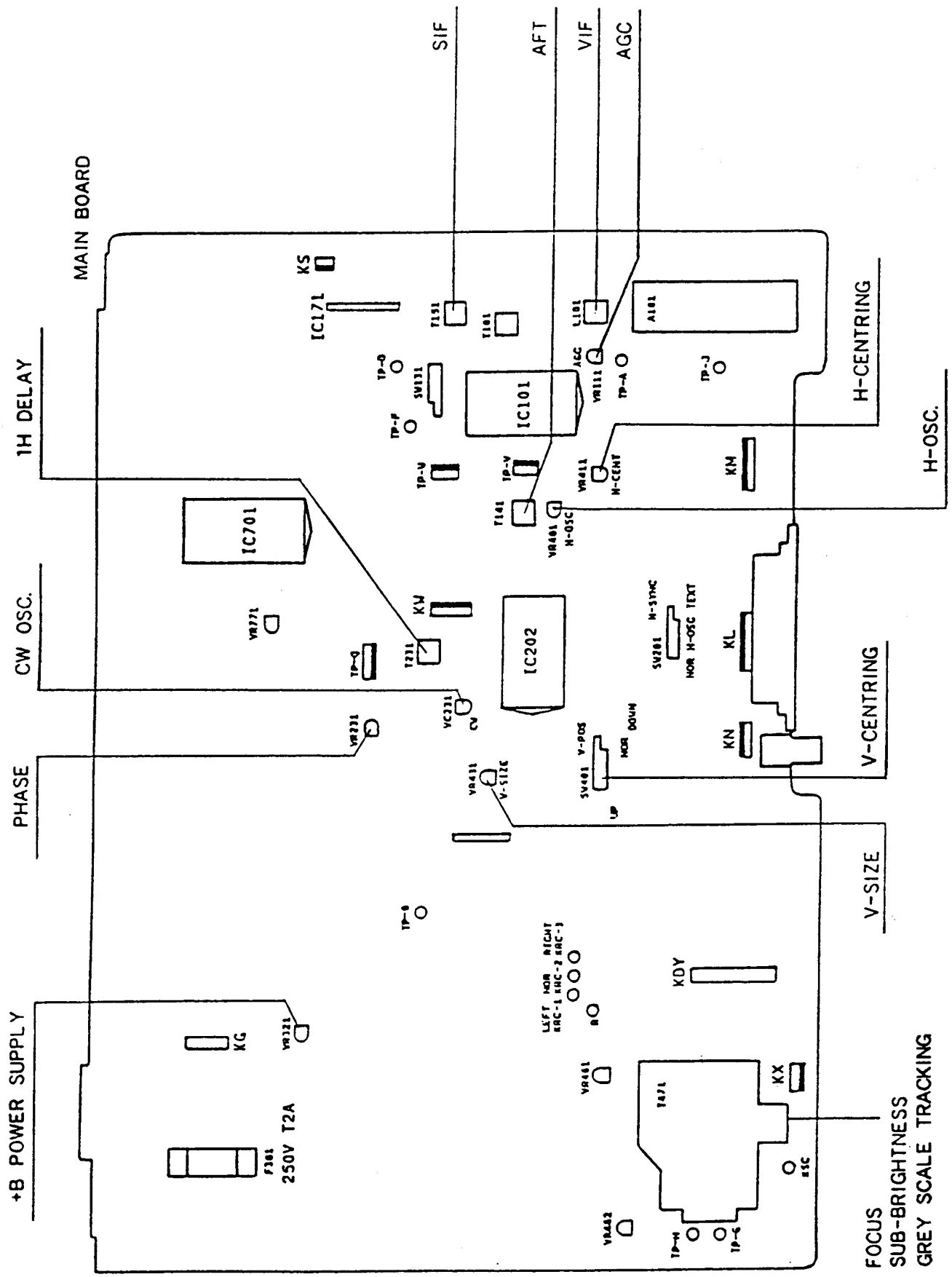
ORIGINAL VERSION
Chassis Series E4-A21

Give complete "SERVICE REF. NO." for parts order or servicing, it is shown on the rating sheet at cabinet back of the unit.

Note

This TV receiver will not work properly in a foreign countries where the television transmission system and power source differ form the design specifications. Refer to the specifications for the design specifications.

ADJUSTMENTS POINTS



CIRCUIT ALIGNMENT

[VIF ALIGNMENT]

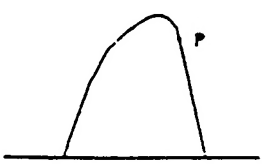
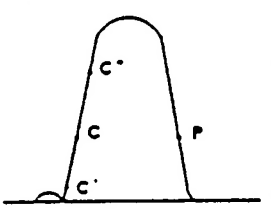
		DETECTOR ADJ.	OVERALL WAVEFORM
S E T T I N G	DC 12V	TP-W, TUNER-MB	TP-W, TUNER-MB
	IF AGC	TP-V, pin③	TP-V, pin③
	Input probe	TP-W, TPF	TP-W, TPF
	Output probe	Tuner-TR b-side	Tuner-TR b-side
	Tuning voltage	Tuner-TU	Tuner-TU
	Damping R	——	TP-V, pin① & ②
	System SW	I	I
	Band	UB	UB
	Sweep ATT	10	10
Adjustment		By using T141, adjust "P" to maximum amplitude.	By using tuner-converter coil and L101, make the marker positions to P=35±10% C=35±10%
VIF waveform			

Fig.1 Input probe

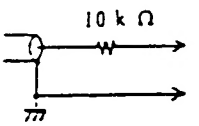


Fig.2 Output probe

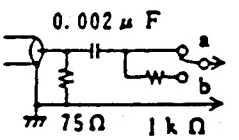
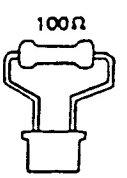
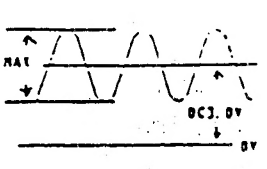


Fig.3 Damping R 100 ohm



[SIF ALIGNMENT]

		SIF-1
S E T T I N G	Digital V-meter	TP-J
	Oscilloscope	TP-J
	Triggered TP-J	
	Channel	
	Carrier	6.0 MHz
	Modulation	400 Hz or 1 KHz
	Deviation	±30 KHz
Adjustment		By using T151, adjust waveform to maximum and DC voltage to 3.0 ± 0.2V
SIF waveform		

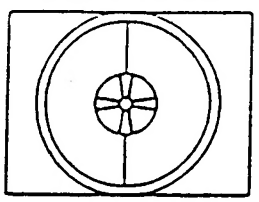
SERVICE CONTROL ADJUSTMENTS

B-VOLTAGE ADJUSTMENT

① Set VR321 to the mechanical centre before pressing the main switch.
② Tune the receiver to the PAL circular pattern.
③ Set brightness and contrast controls to normal.
④ Connect the digital V-meter to the test point "TP-B".
⑤ By using VR321, adjust voltage to 130 ± 0.5 V.

Fig.4

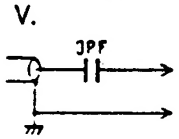
Circular Pattern



TU-AFT ADJUSTMENT

① Tune the receiver to the clearest station. Carrier=39.5MHz, Mod.=80%
② Connect the output probe to the test point "Tuner-TR".
③ Connect the oscilloscope to the test point "TP-D".
④ By using T141, adjust DC voltage to 6.0 ± 0.2 V.

Fig.5



TU-AGC ADJUSTMENT

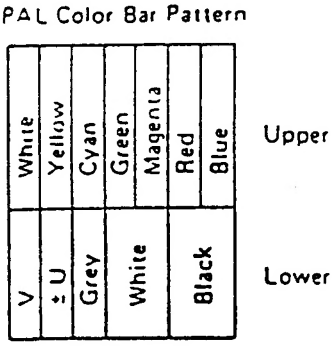
① Tune the receiver to the clearest station.
② Connect the digital V-meter to the test point "TP-A".
③ By using VR111, adjust voltage to 6.2 ± 0.2 V.

HORIZONTAL OSCILLATION ADJUSTMENT

① Tune the receiver to the PAL colour bar pattern.
② Set SW201 to H-oscillation position.
③ By using VR401, adjust the test pattern to standstill.
④ Reset SW201 to normal position.

Fig.6

PAL Color Bar Pattern

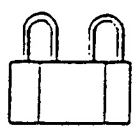


PAL COLOUR ADJUSTMENTS

[CW OSC ADJUSTMENT]

① Tune the receiver to the PAL colour bar pattern, or the philips pattern. Set brightness, contrast and colour controls to the normal.
③ Turn VC231 fully counter-clockwise.
④ Connect the short clip to the test point "TP-Q".
⑤ By turning VC231 clockwise, adjust colour synchronization to standstill.

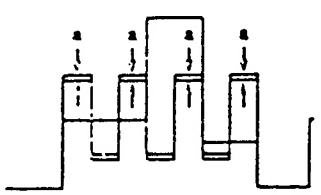
Fig.7



[1H DELAY ADJUSTMENT]

③ Connect the oscilloscope to test points (+) "TP-6B" and (-) "TP-6E".
④ By using T231, adjust "a" to minimum.

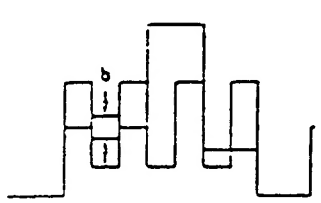
Fig.8



[COLOUR PHASE ADJUSTMENT]

③ Connect the oscilloscope to test points (+) "TP-6B" and (-) "TP-6E".
④ By using VR231 adjust "b" to minimum.

Fig.9



GREY SCALE ADJUSTMENT

[SCREEN VR ADJUSTMENT]

① Tune the receiver to the black and white pattern.
② Set brightness and contrast controls to normal.
③ Set SW131 to service position.
④ Set VR601, VR611 and VR640 to the mechanical centre.
⑤ Turn VR602, VR612 and VR622 fully counter-clockwise.
⑥ Set the screen VR for one colour to be just visible.

[BIAS VR ADJUSTMENT]

③ By using two of VR602, VR612 or VR622, adjust the line to be white.
④ Turn VR601 to the anti-clockwise end.
⑤ To make white by using VR640.
⑥ Set the screen VR for one colour to be just visible.
⑦ Return VR601 to mechanical centre.

[DRIVE VR ADJUSTMENT]

③ By using VR601 and VR611, adjust white balance.

HIGH-VOLTAGE & WIDTH CONFIRM

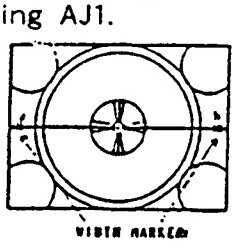
[HIGH-VOLTAGE CONFIRM]

① Tune the receiver to the PAL circular pattern.
② Set brightness and contrast controls to normal.
③ Connect the digital V-meter to test points (+) "TP-H" and (-) "TP-G", and the high-voltage meter to the CRT anode.
④ Confirm the high voltage to be 24.0 ± 1 KV at beam current 0.6 ± 0.05, and less than 27.0 KV at beam current 0.

[H-WIDTH CONFIRM]

③ Cut AJ1 if the width marks add upto less than 10.
④ Reconfirm the high voltage in case of cutting AJ1.

Fig.10



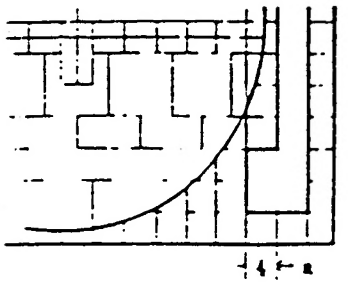
H-CENTRE ADJUSTMENT

① Tune the receiver to the PAL circular pattern.
② By using VR411, adjust H-centre to read 0 ± 3 mm.

CHARACTER SETTING ADJUSTMENT

① Tune the receiver to the philips pattern.
② Press the recall button on the remote control transmitter.
③ By using VR771, adjust the position of "No." within "a".

Fig.11



V-CENTRE & SIZE ADJUSTMENT

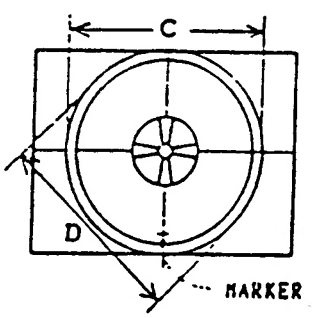
[V-CENTRE ADJUSTMENT]

① Tune the receiver to the PAL circular pattern.
② Set brightness and contrast controls to normal.
③ By using SW401, adjust V-centre to read 0 ± 3 mm.

[V-SIZE ADJUSTMENT]

③ Using VR431 adjust for the largest marker to read 4.5.

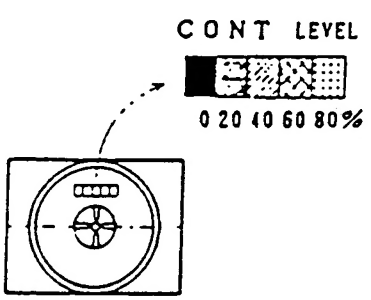
Fig.12



FOCUS ADJUSTMENT

① Tune the receiver to the PAL circular pattern.
② Set contrast control to normal.
③ By using brightness control on the remote control, set the grey scale to 20% black.
④ Adjust the focus VR for best picture.

Fig.13

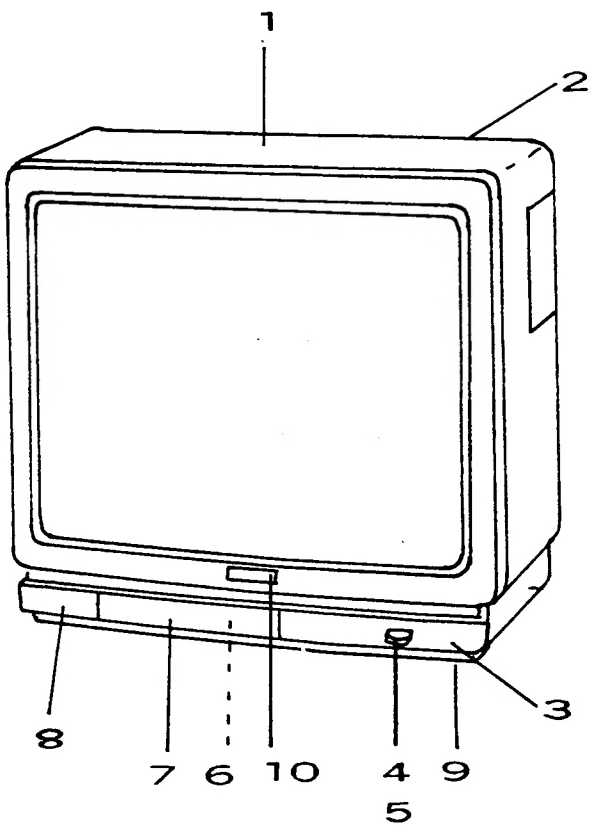


CCT FREQUENCY ADJUSTMENT

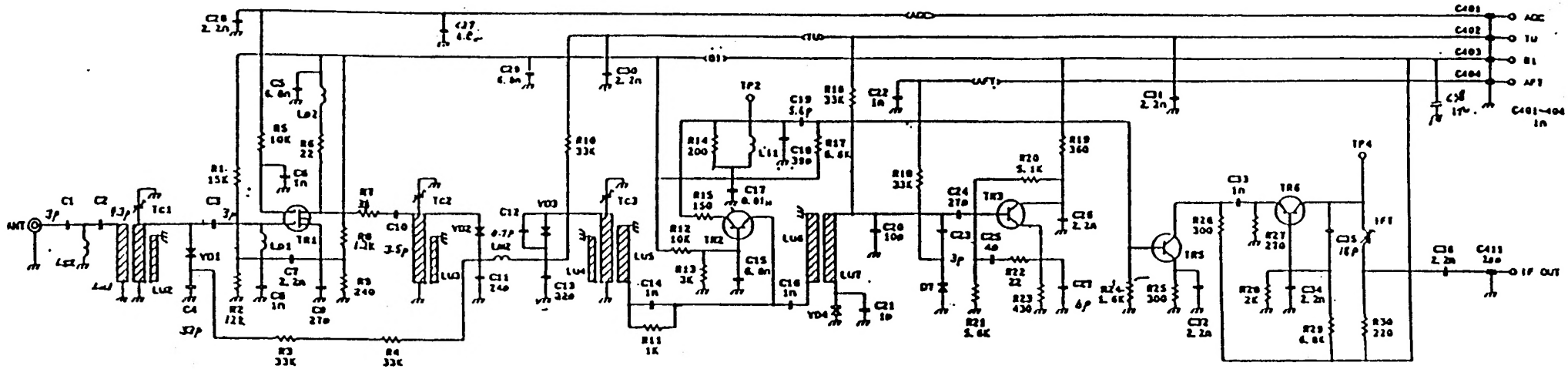
① Put the set into AV mode with no video signal connected.
② Connect the frequency counter to test point "TP-1001".
③ By using T1011, adjust the frequency to 6000.0 ± 30 KHz.

CABINET PARTS LIST

Note:— The model number and full part number must be quoted when ordering parts.



Key No.	Part No.	Description
1.	SKYP055	CABINET FRONT ASSY - E4BF
2.	4AA2BC0063---	CABINET BACK - E4BF
3.	4AA2PN0049-A-	FRONT PANEL - E4BE (CT-2158)
	4AA2PN0049---	FRONT PANEL A-E4BF (CT-2160)
4.	4AA2BY0048---	POWER BUTTON - E4BF
5.	1S00634	SPRING COIL
6.	3S06386	CONTROL DECORATION PLATE
7.	4AA2DR0034-A-	DOOR - E4BE (CT-2158)
	4AA2DR0034---	DOOR - E4BF (CT-2160)
8.	4AA2PN0050---	FRONT PANEL B-E4BF
9.	3R02009	LEG - E4AC
10.	4AA2BG0015---	BADGE - E4BF
11.	JXKJ	RC TRANSMITTER (4AA4U1T0016A-)
	610105S000	BATTERY COVER



NOTES 1. UNLESS OTHERWISE SPECIFIED ALL RESISTORS ARE IN OHM(1/8W). CAPACITORS ARE IN FARAD. INDUCTORS ARE IN HENRY.

2. SEMICONDUCTORS ARE AS FOLLOWS.

TR1 :3SK88, 3SK106, 3SK101

TR2 :2SC4247, 2SC4248, 2SC4261, 2SC4105

TR3 :2SC4249, 2SC4248, 2SC4261, 2SC4105

TR5 :2SC4250, 2SC4251, 2SC4265, 2SC4134

TR6 :2SC4251, 2SC4250, 2SC4104, 2SC4265

VD1~4:1SV214, 1SV221, HVU202

D1 :HVU69A, 1SV101

	UHF	VHI	VLO
MB	12V	12V	12V
UB	12V	OPEN	OPEN
AGC	TV		
AFT	6.5V		
TU	1~28V		

Chassis Electrical Parts List

Constructed by the following units.

Model: CT-2158		Model: CT-2160	
610 215 2920	UE2019	610 215 2920	UE2019
610 205 7553	UE1668A	610 205 7553	UE1668A
		610 215 2937	UE2020
013E4BE		013E4BE	

REPLACEMENT PARTS LIST

PLEASE READ CAREFULLY THE SAFETY INSTRUCTION NOTICE ON PAGE 1 BEFORE SUBSTITUTING ANY PARTS

Note:— The model number and full part number must be quoted when ordering parts.

ALT PART N° 6102283563

610 215 2920 (MAIN UNIT E4PC)

TRANSISTORS

Ref. No.	Part No.	Description
Q101	405 013 3305	TR 2SC2216(SAN)
Q112	406 007 2106	TR JC546A
	OR 406 007 2007	TR JC546B
	OR 405 019 1909	TR 2SC536-E-NP
	OR 405 019 2708	TR 2SC536-F-NP
	OR 405 019 3804	TR 2SC536-G-NP
Q122	406 007 2106	TR JC546A
	OR 406 007 2007	TR JC546B
	OR 405 019 1909	TR 2SC536-E-NP
	OR 405 019 2708	TR 2SC536-F-NP
	OR 405 019 3804	TR 2SC536-G-NP
Q123	406 007 1901	TR JC556A
	OR 406 007 1802	TR JC556B
	OR 405 004 4205	TR 2SA608-E-CTV-NP
	OR 405 004 4809	TR 2SA608-F-CTV-NP
	OR 405 028 7909	TR 2SA608-G-CTV-NP
Q131	406 007 1901	TR JC556A
	OR 406 007 1802	TR JC556B
	OR 405 004 4205	TR 2SA608-E-CTV-NP
	OR 405 004 4809	TR 2SA608-F-CTV-NP
	OR 405 028 7909	TR 2SA608-G-CTV-NP
Q151	406 007 2106	TR JC546A
	OR 406 007 2007	TR JC546B
	OR 405 019 1909	TR 2SC536-E-NP
	OR 405 019 2708	TR 2SC536-F-NP
	OR 405 019 3804	TR 2SC536-G-NP
Q152	406 007 1901	TR JC556A
	OR 406 007 1802	TR JC556B
	OR 405 004 4205	TR 2SA608-E-CTV-NP
	OR 405 004 4809	TR 2SA608-F-CTV-NP
	OR 405 028 7909	TR 2SA608-G-CTV-NP
Q171	406 007 2106	TR JC546A
	OR 406 007 2007	TR JC546B
	OR 405 019 1909	TR 2SC536-E-NP
	OR 405 019 2708	TR 2SC536-F-NP
	OR 405 019 3804	TR 2SC536-G-NP
Q221	406 007 1901	TR JC556A
	OR 406 007 1802	TR JC556B
	OR 405 004 4205	TR 2SA608-E-CTV-NP
	OR 405 004 4809	TR 2SA608-F-CTV-NP
	OR 405 028 7909	TR 2SA608-G-CTV-NP
Q241	406 007 2106	TR JC546A
	OR 406 007 2007	TR JC546B
	OR 405 019 1909	TR 2SC536-E-NP
	OR 405 019 2708	TR 2SC536-F-NP
	OR 405 019 3804	TR 2SC536-G-NP
Q242	406 007 1901	TR JC556A
	OR 406 007 1802	TR JC556B
	OR 405 004 4205	TR 2SA608-E-CTV-NP
	OR 405 028 7909	TR 2SA608-G-CTV-NP
	OR 405 004 4809	TR 2SA608-F-CTV-NP
Q243	406 007 2106	TR JC546A
	OR 406 007 2007	TR JC546B
	OR 405 019 1909	TR 2SC536-E-NP
	OR 405 019 2708	TR 2SC536-F-NP
	OR 405 019 3804	TR 2SC536-G-NP
Q251	406 007 2106	TR JC546A
	OR 406 007 2007	TR JC546B
	OR 405 019 1909	TR 2SC536-E-NP
	OR 405 019 2708	TR 2SC536-F-NP
	OR 405 019 3804	TR 2SC536-G-NP
Q261	406 007 1901	TR JC556A
	OR 406 007 1802	TR JC556B
	OR 405 004 4205	TR 2SA608-E-CTV-NP
	OR 405 004 4809	TR 2SA608-F-CTV-NP
	OR 405 028 7909	TR 2SA608-G-CTV-NP
Q262	406 007 2106	TR JC546A
	OR 406 007 2007	TR JC546B
	OR 405 019 1909	TR 2SC536-E-NP
	OR 405 019 2708	TR 2SC536-F-NP
	OR 405 019 3804	TR 2SC536-G-NP
Q301	406 007 1901	TR JC556A
	OR 406 007 1802	TR JC556B
	OR 405 004 4205	TR 2SA608-E-CTV-NP
	OR 405 004 4809	TR 2SA608-F-CTV-NP
	OR 405 028 7909	TR 2SA608-G-CTV-NP
Q302	405 058 0208	TR 2SC3807-R-CTV-YA
Q303	405 022 8506	TR 2SD1710-CTV-YB
Q304	405 022 0005	TR 2SD1246-T
	OR 405 039 8001	TR 2SD1246-U
Q341	406 007 2106	TR JC546A
	OR 406 007 2007	TR JC546B
	OR 405 019 1909	TR 2SC536-E-NP
	OR 405 019 2708	TR 2SC536-F-NP
	OR 405 019 3804	TR 2SC536-G-NP
Q351	405 059 9804	TR 2SD1913-Q-RA
	OR 405 059 9903	TR 2SD1913-R-RA
	OR 405 060 0005	TR 2SD1913-S-RA
Q391	405 014 8408	TR 2SC2568(1)-K
	OR 405 014 8507	TR 2SC2568(1)-L
	OR 405 041 6507	TR 2SC2621-D-RA
	OR 405 041 6705	TR 2SC2621-E-RA
Q409	406 007 2106	TR JC546A
	OR 406 007 2007	TR JC546B
	OR 405 019 1909	TR 2SC536-E-NP
	OR 405 019 2708	TR 2SC536-F-NP
	OR 405 019 3804	TR 2SC536-G-NP
Q451	405 011 1808	TR 2SC1627-O
	OR 405 011 1907	TR 2SC1627-Y
	OR 405 013 6801	TR 2SC2274-E
	OR 405 013 7006	TR 2SC2274-F
Q452	405 022 6700	TR 2SD1650-CTV-YB
Q701	406 007 1901	TR JC556A
	OR 406 007 1802	TR JC556B
	OR 405 004 4205	TR 2SA608-E-CTV-NP
	OR 405 004 4809	TR 2SA608-F-CTV-NP
	OR 405 028 7909	TR 2SA608-G-CTV-NP
Q702	406 007 2106	TR JC546A
	OR 406 007 2007	TR JC546B
	OR 405 019 1909	TR 2SC536-E-NP
	OR 405 019 2708	TR 2SC536-F-NP
	OR 405 019 3804	TR 2SC536-G-NP

Ref. No.	Part No.	Description
Q706	406 007 2106	TR JC546A
	OR 406 007 2007	TR JC546B
	OR 405 019 1909	TR 2SC536-E-NP
	OR 405 019 2708	TR 2SC536-F-NP
	OR 405 019 3804	TR 2SC536-G-NP
Q707	406 007 2106	TR JC546A
	OR 406 007 2007	TR JC546B
	OR 405 019 1909	TR 2SC536-E-NP
	OR 405 019 2708	TR 2SC536-F-NP
	OR 405 019 3804	TR 2SC536-G-NP
Q708	406 007 2106	TR JC546A
	OR 406 007 2007	TR JC546B
	OR 405 019 1909	TR 2SC536-E-NP
	OR 405 019 2708	TR 2SC536-F-NP
	OR 405 019 3804	TR 2SC536-G-NP
Q710	406 007 2106	TR JC546A
	OR 406 007 2007	TR JC546B
	OR 405 019 1909	TR 2SC536-E-NP
	OR 405 019 2708	TR 2SC536-F-NP
	OR 405 019 3804	TR 2SC536-G-NP
Q711	406 007 2106	TR JC546A
	OR 406 007 2007	TR JC546B
	OR 405 019 1909	TR 2SC536-E-NP
	OR 405 019 2708	TR 2SC536-F-NP
	OR 405 019 3804	TR 2SC536-G-NP
Q731	406 007 2106	TR JC546A
	OR 406 007 2007	TR JC546B
	OR 405 019 1909	TR 2SC536-E-NP
	OR 405 019 2708	TR 2SC536-F-NP
	OR 405 019 3804	TR 2SC536-G-NP
Q732	406 007 2106	TR JC546A
	OR 406 007 2007	TR JC546B
	OR 405 019 1909	TR 2SC536-E-NP
	OR 405 019 2708	TR 2SC536-F-NP
	OR 405 019 3804	TR 2SC536-G-NP
Q733	406 007 1901	TR JC556A
	OR 406 007 1802	TR JC556B
	OR 405 004 4205	TR 2SA608-E-CTV-NP
	OR 405 004 4809	TR 2SA608-F-CTV-NP
	OR 405 028 7909	TR 2SA608-G-CTV-NP
Q734	406 007 2106	TR JC546A
	OR 406 007 2007	TR JC546B
	OR 405 019 1909	TR 2SC536-E-NP
	OR 405 019 2708	TR 2SC536-F-NP
	OR 405 019 3804	TR 2SC536-G-NP
Q741	406 007 2106	TR JC546A
	OR 406 007 2007	TR JC546B
	OR 405 019 1909	TR 2SC536-E-NP
	OR 405 019 2708	TR 2SC536-F-NP
	OR 405 019 3804	TR 2SC536-G-NP
Q742	406 007 1901	TR JC556A
	OR 406 007 1802	TR JC556B
	OR 405 004 4205	TR 2SA608-E-CTV-NP
	OR 405 004 4809	TR 2SA608-F-CTV-NP
	OR 405 028 7909	TR 2SA608-G-CTV-NP
Q751	406 007 2106	TR JC546A
	OR 406 007 2007	TR JC546B
	OR 405 019 1909	TR 2SC536-E-NP
	OR 405 019 2708	TR 2SC536-F-NP
	OR 405 019 3804	TR 2SC536-G-NP
Q752	406 007 2106	TR JC546A
	OR 406 007 2007	TR JC546B
	OR 405 019 1909	TR 2SC536-E-NP
	OR 405 019 2708	TR 2SC536-F-NP
	OR 405 019 3804	TR 2SC536-G-NP
Q753	406 007 2106	TR JC546A
	OR 406 007 2007	TR JC546B
	OR 405 019 1909	TR 2SC536-E-NP
	OR 405 019 2708	TR 2SC536-F-NP
	OR 405 019 3804	TR 2SC536-G-NP
Q761	406 007 2106	TR JC546A
	OR 406 007 2007	TR JC546B
	OR 405 019 1909	TR 2SC536-E-NP
	OR 405 019 2708	TR 2SC536-F-NP
	OR 405 019 3804	TR 2SC536-G-NP

Ref. No.	Part No.	Description
Q771	406 007 1901	TR JC556A
	OR 406 007 1802	TR JC556B
	OR 405 004 4205	TR 2SA608-E-CTV-NP
	OR 405 004 4809	TR 2SA608-F-CTV-NP
	OR 405 028 7909	TR 2SA608-G-CTV-NP
Q772	406 007 2106	TR JC546A
	OR 406 007 2007	TR JC546B
	OR 405 019 1909	TR 2SC536-E-NP
	OR 405 019 2708	TR 2SC536-F-NP
	OR 405 019 3804	TR 2SC536-G-NP
Q773	406 007 2106	TR JC546A
	OR 406 007 2007	TR JC546B
	OR 405 019 1909	TR 2SC536-E-NP
	OR 405 019 2708	TR 2SC536-F-NP
	OR 405 019 3804	TR 2SC536-G-NP

INTEGRATED CIRCUITS

IC101	409 195 2200	IC TDA4505M/N3
	OR 410 044 4504	IC TDA4505M
IC171	409 073 1509	IC AN5265
IC201	410 067 3201	IC TEA2014A
IC202	409 212 0400	IC TDA3566/N5
	OR 410 041 5801	IC TDA3566/N4
IC362	409 026 9507	IC L78M12-RA
IC431	409 183 5008	IC LA7832
IC701	410 081 5007	IC M34300N4-624SP

CAPACITORS

C101	403 011 3808	CERAMIC	120P	J	50V
C102	403 030 5401	CERAMIC	68P	J	50V
C103	403 026 1103	CERAMIC	47P	J	50V
C104	403 069 8305	CERAMIC	0.01U	Z	50V
C106	403 069 8305	CERAMIC	0.01U	Z	50V
C107	403 069 8305	CERAMIC	0.01U	Z	50V
C111	403 044 1703	ELECT	470U	M	16V
C112	403 070 8400	CERAMIC	1500P	K	50V
C113	403 069 8305	CERAMIC	0.01U	Z	50V
C114	403 072 2604	CERAMIC	0.022U	Z	50V
C115	403 008 5501	CERAMIC	10P	D	50V
C118	403 067 7805	MT-COMPO	0.47U	J	50V
C119	403 069 0507	CERAMIC	1000P	K	50V
C120	403 049 0008	ELECT	1U	M	50V
C121	403 069 0507	CERAMIC	1000P	K	50V
C122	403 067 7805	MT-COMPO	0.47U	J	50V
C123	403 051 0607	ELECT	4.7U	M	50V
C124	403 067 6709	MT-COMPO	0.22U	J	50V
C128	403 048 6308	ELECT	0.47U	M	50V
C134	403 030 5401	CERAMIC	68P	J	50V
C141	403 028 2009	CERAMIC	56P	J	50V
C142	403 049 0008	ELECT	1U	M	50V
C144	403 030 5401	CERAMIC	68P	J	50V
C146	403 024 0009	CERAMIC	39P	J	50V
C151	403 026 1301	CERAMIC	47P	J	50V
C152	403 069 8305	CERAMIC	0.01U	Z	50V
C153	403 067 5603	MT-COMPO	0.1U	J	50V
C154	403 042 7707	ELECT	22U	M	16V
C155C	403 060 2302	POLYESTER	0.027U	K	50V
	OR 403 060 2906	POLYESTER	0.027U	K	50V
	OR 403 179 2002	POLYESTER	0.027U	K	50V
C156	403 049 9803	ELECT	2.2U	M	50V
C157	403 043 9106	ELECT	47U	M	16V
C170	403 051 0607	ELECT	4.7U	M	50V
C171	403 042 2405	ELECT	100U	M	16V
C172	403 067 7805	MT-COMPO	0.47U	J	50V
C173	403 072 5308	CERAMIC	2700P	K	50V
C174	403 045 7803	ELECT	220U	M	25V
C175	403 067 5603	MT-COMPO	0.1U	J	50V
C176	403 067 5603	MT-COMPO	0.1U	J	50V
C177	403 045 1504	ELECT	1000U	M	25V
	OR 403 045 1603	ELECT	1000U	M	25V
C178	403 041 8804	ELECT	10U	M	16V
C179	403 041 8804	ELECT	10U	M	16V
C201	403 069 8305	CERAMIC	0.01U	Z	50V

Ref. No.	Part No.	Description		
C202	403 043 9106	ELECT	47U M	16V
C203	403 051 0607	ELECT	4.7U M	50V
C204	403 069 8305	CERAMIC	0.01U Z	50V
C205	403 071 1707	CERAMIC	180P K	50V
C206	403 009 3407	CERAMIC	100P J	50V
C207	403 069 8305	CERAMIC	0.01U Z	50V
C208	403 048 6308	ELECT	0.47U M	50V
C211	403 043 6006	ELECT	330U M	16V
C212	403 069 8305	CERAMIC	0.01U Z	50V
C213	403 049 9803	ELECT	2.2U M	50V
C214	403 041 8804	ELECT	10U M	16V
C216	403 049 9803	ELECT	2.2U M	50V
C217	403 051 0607	ELECT	4.7U M	50V
C218	403 067 7300	MT-COMPO	0.33U J	50V
C221	403 067 7805	MT-COMPO	0.47U J	50V
C222	403 067 5603	MT-COMPO	0.1U J	50V
C223	403 067 5603	MT-COMPO	0.1U J	50V
C224	403 067 5603	MT-COMPO	0.1U J	50V
C226	403 049 0008	ELECT	1U M	50V
C227	403 067 7805	MT-COMPO	0.47U J	50V
C228	403 067 7805	MT-COMPO	0.47U J	50V
C231	403 072 4400	CERAMIC	270P K	50V
C232	403 069 8305	CERAMIC	0.01U Z	50V
C233	403 069 8305	CERAMIC	0.01U Z	50V
C234	403 060 8205	POLYESTER	0.033U K	50V
OR	403 179 1609	POLYESTER	0.033U K	50V
C235	403 060 8205	POLYESTER	0.033U K	50V
OR	403 179 1609	POLYESTER	0.033U K	50V
C236	403 049 0008	ELECT	1U M	50V
C241	403 049 4204	ELECT	10U M	50V
C251	403 041 8804	ELECT	10U M	16V
C252	403 067 7805	MT-COMPO	0.47U J	50V
C261	403 041 8804	ELECT	10U M	16V
⚠ C300	404 007 9903	MT-COMPO	0.1U M	250V
C302	403 076 7100	CERAMIC	1000P M	1K
C303	403 076 7100	CERAMIC	1000P M	1K
C304	403 076 7100	CERAMIC	1000P M	1K
C305	403 076 7100	CERAMIC	1000P M	1K
C306	404 032 1705	ELECT	150U M	385V
OR	404 038 2607	ELECT	150U M	385V
C307	403 119 1508	ELECT	4.7U M	100V
C310	403 165 6205	CERAMIC	1000P K	2K
OR	403 077 2302	CERAMIC	1000P K	2K
C311	403 069 0507	CERAMIC	1000P K	50V
C312	403 067 7706	MT-COMPO	0.047U J	50V
C313	403 057 0403	POLYESTER	0.01U K	50V
OR	403 179 3801	POLYESTER	0.01U K	50V
⚠ C340	404 008 3108	CERAMIC	470P M	400V
⚠ C342	404 008 3108	CERAMIC	470P M	400V
C344	404 042 4703	ELECT	220U M	160V
C345	403 165 8605	CERAMIC	470P K	2K
OR	403 077 7901	CERAMIC	470P K	2K
C352	403 042 4805	ELECT	1000U M	16V
C353	403 040 9406	ELECT	330U M	10V
C354	403 041 2109	ELECT	47U M	10V
C361	403 165 6106	CERAMIC	470P K	1K
OR	403 077 0407	CERAMIC	470P K	1K
C362	403 045 1504	ELECT	1000U M	25V
OR	403 045 1603	ELECT	1000U M	25V
C366	403 043 7409	ELECT	3300U M	16V
C372	403 053 3606	ELECT	2200U M	35V
C382	403 045 9807	ELECT	2200U M	25V
C391	403 047 5005	ELECT	470U M	25V
C392	403 038 3409	ELECT	1000U M	6.3V
C401	403 067 5603	MT-COMPO	0.1U J	50V
C402	403 095 0403	COMPO-FILM	2700P J	50V
C403	403 051 0607	ELECT	4.7U M	50V
C404	403 067 8208	MT-COMPO	0.068U J	50V
C406	403 070 7403	CERAMIC	150P K	50V
C407	403 067 6709	MT-COMPO	0.22U J	50V
C408	403 067 6204	MT-COMPO	0.15U J	50V
C411	403 071 7402	CERAMIC	2200P K	50V
C412	403 067 6709	MT-COMPO	0.22U J	50V
C430	403 155 5706	ELECT	47U M	35V
OR	403 190 2500	ELECT	47U M	35V

Ref. No.	Part No.	Description		
C432	403 074 5702	CERAMIC	560P K	50V
C433	403 049 4204	ELECT	10U M	50V
C434	403 069 8305	CERAMIC	0.01U Z	50V
C435	403 045 9807	ELECT	2200U M	25V
C437	403 053 2104	ELECT	220U M	35V
C438	403 065 9405	MT-POLYEST	0.15U K	100V
C439	403 023 9706	CERAMIC	39P J	50V
C441	403 082 7804	POLYPRO	0.18U J	200V
C442	403 082 7408	POLYPRO	0.15U J	200V
C443	403 082 8405	POLYPRO	0.22U J	200V
C451	403 054 0703	ELECT	47U M	35V
C452	403 075 7101	CERAMIC	1000P K	500V
C453	403 076 3102	CERAMIC	3900P K	500V
C456	403 165 7202	CERAMIC	390P K	3K
OR	403 078 4701	CERAMIC	390P K	3K
⚠ C457	404 030 5903	MT-POLYPRO	5400P J	1.5K
OR	404 030 6009	MT-POLYPRO	5400P J	1.5K
C458	403 165 7301	CERAMIC	330P K	3K
OR	403 078 4305	CERAMIC	330P K	3K
C459	403 076 1405	CERAMIC	2700P K	500V
C475	403 067 7805	MT-COMPO	0.47U J	50V
C478	403 205 3904	ELECT	22U M	200V
OR	403 205 8909	ELECT	22U M	200V
C479	403 077 2708	CERAMIC	1000P P	2K
C481	403 066 6106	MT-POLYEST	0.47U J	250V
C491	403 043 9106	ELECT	47U M	16V
C701	403 041 4509	ELECT	470U M	10V
C702	403 069 8305	CERAMIC	0.01U Z	50V
C711	403 043 9106	ELECT	47U M	16V
C721	403 068 9006	CERAMIC	100P K	50V
C722	403 068 9006	CERAMIC	100P K	50V
C723	403 068 9006	CERAMIC	100P K	50V
C724	403 068 9006	CERAMIC	100P K	50V
C726	403 051 0607	ELECT	4.7U M	50V
C727	403 051 0607	ELECT	4.7U M	50V
C728	403 051 0607	ELECT	4.7U M	50V
C729	403 051 0607	ELECT	4.7U M	50V
C741	403 071 1707	CERAMIC	180P K	50V
C742	403 067 5603	MT-COMPO	0.1U J	50V
C743	403 067 5603	MT-COMPO	0.1U J	50V
C744	403 051 0607	ELECT	4.7U M	50V
C751	403 067 7805	MT-COMPO	0.47U J	50V
C758	403 041 8804	ELECT	10U M	16V
C764	403 059 2801	POLYESTER	2200P J	50V
OR	403 059 3402	POLYESTER	2200P J	50V
OR	403 179 2705	POLYESTER	2200P J	50V
C771	403 017 7404	CERAMIC	22P J	50V
C772	403 012 4002	CERAMIC	15P J	50V
C773	403 071 7402	CERAMIC	2200P K	50V

RESISTORS

R-L750	401 024 7004	CARBON	1K JA	1/6W
R-L751	401 024 7004	CARBON	1K JA	1/6W
R-L752	401 024 7004	CARBON	1K JA	1/6W
R-L753	401 024 7004	CARBON	1K JA	1/6W
R-L754	401 024 7004	CARBON	1K JA	1/6W
R-L755	401 024 7004	CARBON	1K JA	1/6W
R-L756	401 024 7004	CARBON	1K JA	1/6W
R101	401 025 7805	CARBON	2.2K JA	1/6W
R102	401 027 2600	CARBON	5.6K JA	1/6W
R103	401 024 7004	CARBON	1K JA	1/6W
R104	401 012 4503	CARBON	100 JA	1/4W
R106	401 016 2604	CARBON	220 JA	1/4W
R107	401 026 3707	CARBON	33 JA	1/6W
R111	401 027 5205	CARBON	680 JA	1/6W
R114	401 027 5502	CARBON	6.8K JA	1/6W
R116	401 024 9701	CARBON	12K JA	1/6W
R119	401 026 4605	CARBON	33K JA	1/6W
R120	401 026 9600	CARBON	470 JA	1/6W
R121	401 025 7805	CARBON	2.2K JA	1/6W
R123	401 025 7805	CARBON	2.2K JA	1/6W
R124	401 024 7707	CARBON	100K JA	1/6W
R125	401 027 0309	CARBON	47K JA	1/6W
R126	401 024 7707	CARBON	100K JA	1/6W

AKAI

Service Manual Colour Television

Service CT2158-20

Ref.No. CT2160-20

(U.K.)

Model No. CT2158
CT2160

CONTENTS Page

Filing Instructions

This Service Manual must be filed with the service manual for Service Ref. No. CT2158-00 and CT2160-00.

Give complete "SERVICE REF. NO." for parts order or servicing, it is shown on the rating sheet on the back of the cabinet.

ORIGINAL VERSION

NOTE

SUPPLEMENTAL SERVICE MANUAL
Refer to CT2158-00,CT2160-00 Service Manual for all the items not given in this manual.

CHASSIS SERIES
E4-A21

E4BFT

Ref. No.	Part No.	Description
R128	401 026 9600	CARBON 470 JA 1/6W
R129	401 025 7409	CARBON 220 JA 1/6W
R131	401 026 9907	CARBON 4.7K JA 1/6W
R132	401 024 9305	CARBON 1.2K JA 1/6W
R133	401 024 7004	CARBON 1K JA 1/6W
R141	401 026 4308	CARBON 3.3K JA 1/6W
R142	401 027 6103	CARBON 680K JA 1/6W
R151	401 026 7002	CARBON 3.9K JA 1/6W
R152	401 026 9907	CARBON 4.7K JA 1/6W
R153	401 024 7400	CARBON 10K JA 1/6W
R155	401 024 7400	CARBON 10K JA 1/6W
R157	401 025 8208	CARBON 22K JA 1/6W
R158	401 025 8208	CARBON 22K JA 1/6W
R159	401 024 9305	CARBON 1.2K JA 1/6W
R171	401 024 7004	CARBON 1K JA 1/6W
R172	401 017 6205	CARBON 3.3 JA 1/4W
R173	401 026 3707	CARBON 33 JA 1/6W
R174	401 025 7805	CARBON 2.2K JA 1/6W
R175	401 025 1605	CARBON 1.5K JA 1/6W
R176	401 026 1307	CARBON 27K JA 1/6W
R200	401 025 2305	CARBON 150K JA 1/6W
R201	401 027 5502	CARBON 6.8K JA 1/6W
R202	401 027 5205	CARBON 680 JA 1/6W
R203	401 025 1605	CARBON 1.5K JA 1/6W
R204	401 024 7004	CARBON 1K JA 1/6W
R206	401 026 9600	CARBON 470 JA 1/6W
R207	401 027 8305	CARBON 820 JA 1/6W
R208	401 024 6700	CARBON 100 JA 1/6W
R209	401 024 7004	CARBON 1K JA 1/6W
R211	401 025 0004	CARBON 120K JA 1/6W
R212	401 025 1902	CARBON 15K JA 1/6W
R213	401 027 5908	CARBON 68K JA 1/6W
R214	401 024 9701	CARBON 12K JA 1/6W
R216	401 027 9005	CARBON 82K JA 1/6W
R217	401 025 1902	CARBON 15K JA 1/6W
R218	401 027 9302	CARBON 820K JA 1/6W
R221	401 024 6700	CARBON 100 JA 1/6W
R222	401 024 6700	CARBON 100 JA 1/6W
R223	401 024 6700	CARBON 100 JA 1/6W
R224	401 024 7400	CARBON 10K JA 1/6W
R226	401 024 7400	CARBON 10K JA 1/6W
R227	401 024 7400	CARBON 10K JA 1/6W
R228	401 024 7400	CARBON 10K JA 1/6W
R231	401 026 6609	CARBON 390 JA 1/6W
R232	401 024 9305	CARBON 1.2K JA 1/6W
R233	401 026 6609	CARBON 390 JA 1/6W
R234	401 026 7408	CARBON 39K JA 1/6W
R236	401 026 7408	CARBON 39K JA 1/6W
R237	401 024 7004	CARBON 1K JA 1/6W
R240	401 027 0309	CARBON 47K JA 1/6W
R241	401 022 6801	CARBON 75 JA 1/4W
R242	401 022 6801	CARBON 75 JA 1/4W
R243	401 022 6801	CARBON 75 JA 1/4W
R244	401 022 6801	CARBON 75 JA 1/4W
R246	401 022 6801	CARBON 75 JA 1/4W
R247	401 022 6801	CARBON 75 JA 1/4W
R248	401 025 8208	CARBON 22K JA 1/6W
R249	401 026 1000	CARBON 2.7K JA 1/6W
R250	401 025 7805	CARBON 2.2K JA 1/6W
R251	401 027 2600	CARBON 5.6K JA 1/6W
R252	401 027 2600	CARBON 5.6K JA 1/6W
R253	401 027 2303	CARBON 560 JA 1/6W
R254	401 024 7707	CARBON 100K JA 1/6W
R256	401 024 9305	CARBON 1.2K JA 1/6W
R257	401 027 0309	CARBON 47K JA 1/6W
R258	401 024 7707	CARBON 100K JA 1/6W
R259	401 024 7707	CARBON 100K JA 1/6W
R261	401 024 7400	CARBON 10K JA 1/6W
R262	401 024 7707	CARBON 100K JA 1/6W
R263	401 027 2303	CARBON 560 JA 1/6W
R301	401 008 8607	CARBON 220K JA 1/2W
R302	402 057 8204	WIRE WOUND 3.9 KA 6W
R303	401 025 7805	CARBON 2.2K JA 1/6W
R304	401 025 1902	CARBON 15K JA 1/6W
R305	401 027 3003	CARBON 56K JA 1/6W

Ref. No.	Part No.	Description
R306	401 024 7400	CARBON 10K JA 1/6W
R308	401 007 5805	CARBON 120K JA 1/2W
R309	401 007 5805	CARBON 120K JA 1/2W
R310	401 025 1902	CARBON 15K JA 1/6W
R311	401 067 8204	OXIDE-MT 39 JA 2W
R312	401 024 6700	CARBON 100 JA 1/6W
R313	401 024 7400	CARBON 10K JA 1/6W
R314	401 024 7004	CARBON 1K JA 1/6W
R315	401 026 7002	CARBON 3.9K JA 1/6W
R316	401 026 4308	CARBON 3.3K JA 1/6W
R317	401 025 1308	CARBON 150 JA 1/6W
R318	401 027 2600	CARBON 5.6K JA 1/6W
R319	401 066 5204	OXIDE-MT 22 JA 2W
⚠ R340	402 000 8305	SOLID 5.6M KA 1/2W
⚠ R341	402 000 8305	SOLID 5.6M KA 1/2W
R343	401 023 1300	CARBON 820 GA 1/4W
R344	401 024 6700	CARBON 100 JA 1/6W
R346	401 014 4808	CARBON 15K GA 1/4W
R347	401 013 7008	CARBON 120K GA 1/4W
R351	401 061 0808	OXIDE-MT 3.9 JA 1W
R352	401 027 8305	CARBON 820 JA 1/6W
R361	401 065 9609	OXIDE-MT 18 JA 2W
R381	401 066 3002	OXIDE-MT 2.2 JA 2W
R391	401 025 7805	CARBON 2.2K JA 1/6W
R400	401 026 4902	CARBON 330K JA 1/6W
R401	401 026 1307	CARBON 27K JA 1/6W
R402	401 027 9005	CARBON 82K JA 1/6W
R403	401 024 7004	CARBON 1K JA 1/6W
R404	401 025 4200	CARBON 1.8K JA 1/6W
R406	401 027 2600	CARBON 5.6K JA 1/6W
R407	401 027 3003	CARBON 56K JA 1/6W
R408	401 026 7408	CARBON 39K JA 1/6W
R409	401 024 9305	CARBON 1.2K JA 1/6W
R410	401 024 7400	CARBON 10K JA 1/6W
R411	401 025 2503	CARBON 1.5M JA 1/6W
R431	401 026 7408	CARBON 39K JA 1/6W
R432	401 025 1902	CARBON 15K JA 1/6W
R433	401 006 8104	CARBON 1.2 JA 1/2W
R434	401 007 1104	CARBON 1K JA 1/2W
R435	401 027 2303	CARBON 560 JA 1/6W
R436	401 027 2600	CARBON 5.6K JA 1/6W
R438	401 008 6702	CARBON 220 JA 1/2W
R439	401 026 9907	CARBON 4.7K JA 1/6W
R442	401 007 1203	CARBON 1K JB 1/2W
R443	401 008 0908	CARBON 180 JA 1/2W
R450	401 026 7408	CARBON 39K JA 1/6W
R454	401 026 3905	CARBON 330 JA 1/6W
R455	401 024 7004	CARBON 1K JA 1/6W
R456	401 009 0907	CARBON 270 JA 1/2W
R457	401 012 4503	CARBON 100 JA 1/4W
R474	401 015 4708	CARBON 180K JA 1/4W
⚠ R475	401 001 6808	SOLID 2.7K KA 1/2W
R476	401 024 7004	CARBON 1K JA 1/6W
R477	401 027 5908	CARBON 68K JA 1/6W
⚠ R478	402 001 8502	FUSIBLE RES 10 J- 1/2W
R479	401 026 7606	CARBON 390K JA 1/6W
R481	402 055 4208	WIRE WOUND 10 KA 6W
R491	401 024 7004	CARBON 1K JA 1/6W
R492	401 019 9600	CARBON 47 JA 1/4W
R701	401 025 1605	CARBON 1.5K JA 1/6W
R702	401 027 8602	CARBON 8.2K JA 1/6W
R703	401 026 9907	CARBON 4.7K JA 1/6W
R704	401 026 6609	CARBON 390 JA 1/6W
R707	401 024 7004	CARBON 1K JA 1/6W
R708	401 025 7805	CARBON 2.2K JA 1/6W
R710	401 027 0309	CARBON 47K JA 1/6W
R711	401 026 4308	CARBON 3.3K JA 1/6W
R712	401 026 1307	CARBON 27K JA 1/6W
R713	401 027 5908	CARBON 68K JA 1/6W
R716	401 026 4308	CARBON 3.3K JA 1/6W
R718	401 026 7408	CARBON 39K JA 1/6W
R719	401 027 3003	CARBON 56K JA 1/6W
R722	401 025 7805	CARBON 2.2K JA 1/6W
R723	401 026 1000	CARBON 2.7K JA 1/6W
R726	401 024 7400	CARBON 10K JA 1/6W

Ref. No.	Part No.	Description
R727	401 024 7400	CARBON 10K JA 1/6W
R728	401 024 7400	CARBON 10K JA 1/6W
R729	401 024 7400	CARBON 10K JA 1/6W
R731	401 024 7707	CARBON 100K JA 1/6W
R732	401 025 8208	CARBON 22K JA 1/6W
R733	401 027 5502	CARBON 6.8K JA 1/6W
R734	401 024 9305	CARBON 1.2K JA 1/6W
R736	401 024 7400	CARBON 10K JA 1/6W
R737	401 024 7400	CARBON 10K JA 1/6W
R738	401 026 9907	CARBON 4.7K JA 1/6W
R739	401 024 7400	CARBON 10K JA 1/6W
R740	401 027 2600	CARBON 5.6K JA 1/6W
R741	401 024 7004	CARBON 1K JA 1/6W
R742	401 026 4605	CARBON 33K JA 1/6W
R743	401 026 1307	CARBON 27K JA 1/6W
R744	401 025 8208	CARBON 22K JA 1/6W
R745	401 025 8703	CARBON 220K JA 1/6W
R746	401 025 8208	CARBON 22K JA 1/6W
R747	401 025 8208	CARBON 22K JA 1/6W
R748	401 064 9907	OXIDE-MT 10K JA 2W
R749	401 025 8208	CARBON 22K JA 1/6W
R750	401 025 8208	CARBON 22K JA 1/6W
R751	401 025 8208	CARBON 22K JA 1/6W
R752	401 027 3003	CARBON 56K JA 1/6W
R753	401 026 9600	CARBON 470 JA 1/6W
R754	401 027 0309	CARBON 47K JA 1/6W
R755	401 024 7400	CARBON 10K JA 1/6W
R758	401 027 0309	CARBON 47K JA 1/6W
R759	401 027 0309	CARBON 47K JA 1/6W
R764	401 024 7400	CARBON 10K JA 1/6W
R766	401 024 7400	CARBON 10K JA 1/6W
R767	401 026 1000	CARBON 2.7K JA 1/6W
R768	401 025 7805	CARBON 2.2K JA 1/6W
R771	401 027 0309	CARBON 47K JA 1/6W
R772	401 025 8703	CARBON 220K JA 1/6W
R773	401 024 7400	CARBON 10K JA 1/6W
R774	401 025 7409	CARBON 220 JA 1/6W
R776	401 025 7409	CARBON 220 JA 1/6W
R777	401 024 7400	CARBON 10K JA 1/6W
R778	401 024 7400	CARBON 10K JA 1/6W
R782	401 025 8208	CARBON 22K JA 1/6W
R783	401 026 4605	CARBON 33K JA 1/6W
R784	401 025 8208	CARBON 22K JA 1/6W
R791	401 024 9701	CARBON 12K JA 1/6W
R792	401 025 1902	CARBON 15K JA 1/6W
R793	401 025 1902	CARBON 15K JA 1/6W
R794	401 025 1902	CARBON 15K JA 1/6W

VARIABLE RESISTORS

VR111	610 019 3932	VARIABLE RESISTOR B-50K
	OR 610 019 2607	VR B-50K
VR231	610 019 3864	VARIABLE RESISTOR B-1K
	OR 610 019 2560	VR B-1K
⚠ VR321	610 019 3864	VARIABLE RESISTOR B-1K
	OR 610 019 2560	VR B-1K
VR401	610 018 9706	VR B-10K
	OR 610 018 9713	VR B-10K
	OR 610 018 9720	VR B-10K
VR411	610 019 3932	VARIABLE RESISTOR B-50K
	OR 610 019 2607	VR B-50K
VR431	610 019 3826	VARIABLE RESISTOR B-100
VR771	610 019 3888	VARIABLE RESISTOR B-3K
	OR 610 019 4045	VARIABLE RESISTOR B-3K

TRANSFORMERS

T101	610 037 7646	S TRANS
T141	610 037 4522	S COIL
T151	610 037 5338	S COIL
T231	610 037 7004	S TRANS
⚠ T301	610 000 2814	CONVERTER TRANS
T391	610 033 3765	POWER TRANS
T451	610 000 1053	DRIVE TRANS
	OR 610 000 1060	DRIVE TRANS

Ref. No.	Part No.	Description
⚠ T471	610 211 4850	FBT

COILS

L-J232	610 029 5926	PEAKING COIL 10UH K
	OR 610 210 3366	PEAKING COIL 10UHK
	OR 610 029 8125	PEAKING COIL 10UH K
L101	610 037 5727	S TRANS
L131	610 029 6060	PEAKING COIL 18UH K
	OR 610 210 3434	PEAKING COIL 18UHK
	OR 610 029 8262	PEAKING COIL 18UH K
L141	610 029 6367	PEAKING COIL 5.6UH K
	OR 610 029 8606	PEAKING COIL 5.6UH K
	OR 610 210 3601	PEAKING COIL 5.6UHK
L201	610 030 0712	DELAY LINE
L202	610 029 6466	PEAKING COIL 8.2UH K
	OR 610 210 3663	PEAKING COIL 8.2UHK
	OR 610 029 8729	PEAKING COIL 8.2UH K
L231	610 029 6466	PEAKING COIL 8.2UH K
	OR 610 210 3663	PEAKING COIL 8.2UHK
	OR 610 029 8729	PEAKING COIL 8.2UH K
L232	610 030 0743	DELAY LINE
	OR 610 030 0934	DELAY LINE
	OR 610 208 8878	DELAY LINE
⚠ L301	610 031 5945	LINE FILTER
	OR 610 031 5976	LINE FILTER
	OR 610 213 9563	LINE FILTER
L303	610 078 5946	PIPE CORE
L431	610 029 5940	PEAKING COIL 100UH K
	OR 610 210 3373	PEAKING COIL 100UHK
	OR 610 029 8149	PEAKING COIL 100UH K
L441	610 000 0292	COIL
	OR 610 205 0080	COIL
L442	610 210 8071	LINEARITY COIL
	OR 610 000 0605	LINEARITY COIL
L443	610 032 0703	INDUCTOR
L452	610 078 4635	PIPECORE
L741	610 029 5926	PEAKING COIL 10UH K
	OR 610 210 3366	PEAKING COIL 10UHK
	OR 610 029 8125	PEAKING COIL 10UH K

DIODES

D152	408 007 8607	DIODE 1N4148
	OR 407 013 1206	DIODE 1S1555
D171	408 007 8607	DIODE 1N4148
	OR 407 013 1206	DIODE 1S1555
D201	407 048 6900	ZENER DIODE EQA02-12A
	OR 407 048 7105	ZENER DIODE EQA02-12B
D241	407 048 6900	ZENER DIODE EQA02-12A
	OR 407 048 7105	ZENER DIODE EQA02-12B
D242	407 048 6900	ZENER DIODE EQA02-12A
	OR 407 048 7105	ZENER DIODE EQA02-12B
D243	407 048 6900	ZENER DIODE EQA02-12A
	OR 407 048 7105	ZENER DIODE EQA02-12B
D244	407 048 6900	ZENER DIODE EQA02-12A
	OR 407 048 7105	ZENER DIODE EQA02-12B
D245	407 048 6900	ZENER DIODE EQA02-12A
	OR 407 048 7105	ZENER DIODE EQA02-12B
D246	407 048 6900	ZENER DIODE EQA02-12A
	OR 407 048 7105	ZENER DIODE EQA02-12B
D247	407 048 6900	ZENER DIODE EQA02-12A
	OR 407 048 7105	ZENER DIODE EQA02-12B
D248	407 048 6900	ZENER DIODE EQA02-12A
	OR 407 048 7105	ZENER DIODE EQA02-12B
D249	407 048 6900	ZENER DIODE EQA02-12A
	OR 407 048 7105	ZENER DIODE EQA02-12B
D261	408 007 8607	DIODE 1N4148
	OR 407 013 1206	DIODE 1S1555
D302	407 006 6300	DIODE ERC05-10B
	OR 407 009 6901	DIODE RM11C
	OR 407 064 6908	DIODE TVR4N(X)
D303	407 006 6300	DIODE ERC05-10B
	OR 407 009 6901	DIODE RM11C
	OR 407 064 6908	DIODE TVR4N(X)

Ref. No.	Part No.	Description
D304	407 006 6300	DIODE ERC05-10B
	OR 407 009 6901	DIODE RM11C
	OR 407 064 6908	DIODE TVR4N(X)
D305	407 006 6300	DIODE ERC05-10B
	OR 407 009 6901	DIODE RM11C
	OR 407 064 6908	DIODE TVR4N(X)
D306	407 007 7405	DIODE EU1
D307	407 048 2407	ZENER DIODE EQA02-06E
	OR 407 048 2605	ZENER DIODE EQA02-06F
D310	408 007 8607	DIODE 1N4148
	OR 407 013 1008	DIODE 1S1553
	OR 407 013 4306	DIODE 1S2076A
	OR 407 013 6508	DIODE 1S2471
D313	407 007 6606	DIODE ES1
D314	408 007 8607	DIODE 1N4148
	OR 407 013 1008	DIODE 1S1553
	OR 407 013 4306	DIODE 1S2076A
	OR 407 013 6508	DIODE 1S2471
D315	407 048 3503	ZENER DIODE EQA02-07C
	OR 407 048 3701	ZENER DIODE EQA02-07D
⚠ D331	408 007 8706	PHOTO COUPLE CNY75B
	OR 408 007 7303	PHOTO COUPLE CNY75C
D341	407 007 7702	DIODE EU2A
D342	407 048 4203	ZENER DIODE EQA02-08B
D351	408 007 2506	DIODE BYW32
	OR 407 007 7603	DIODE EU2
D353	407 048 2001	ZENER DIODE EQA02-06B
D354	408 007 8607	DIODE 1N4148
	OR 407 013 1206	DIODE 1S1555
D356	408 007 8607	DIODE 1N4148
	OR 407 013 1206	DIODE 1S1555
D361	407 009 8905	DIODE RU3M
D371	408 007 2506	DIODE BYW32
	OR 407 007 7603	DIODE EU2
D381	408 007 2506	DIODE BYW32
	OR 407 007 7603	DIODE EU2
D382	408 007 8607	DIODE 1N4148
	OR 407 013 1206	DIODE 1S1555
D391	407 005 7308	DIODE EM01Z
D392	407 048 2001	ZENER DIODE EQA02-06B
D431	407 005 7308	DIODE EM01Z
D471	408 007 8607	DIODE 1N4148
	OR 407 013 1206	DIODE 1S1555
D478	408 007 2407	DIODE BYV14
	OR 407 007 7108	DIODE EU01A
D491	408 007 8607	DIODE 1N4148
	OR 407 013 1008	DIODE 1S1553
	OR 407 013 4306	DIODE 1S2076A
	OR 407 013 6508	DIODE 1S2471
D492	408 007 8607	DIODE 1N4148
	OR 407 013 1206	DIODE 1S1555
D701	407 055 7907	ZENER DIODE RD3.6EL
D702	408 007 8607	DIODE 1N4148
	OR 407 013 1206	DIODE 1S1555
D703	408 007 8607	DIODE 1N4148
	OR 407 013 1206	DIODE 1S1555
D726	408 007 8607	DIODE 1N4148
	OR 407 013 1206	DIODE 1S1555
D741	408 007 8607	DIODE 1N4148
	OR 407 013 1206	DIODE 1S1555
D743	407 127 3301	ZD BZX55C6V2-GPS-26
D744	407 127 3301	ZD BZX55C6V2-GPS-26
D745	407 127 3301	ZD BZX55C6V2-GPS-26
D746	407 127 3301	ZD BZX55C6V2-GPS-26
D749	407 127 3301	ZD BZX55C6V2-GPS-26
D750	407 127 3301	ZD BZX55C6V2-GPS-26
D751	407 127 3301	ZD BZX55C6V2-GPS-26
D752	408 007 8607	DIODE 1N4148
	OR 407 013 1206	DIODE 1S1555
D753	408 007 8607	DIODE 1N4148
	OR 407 013 1206	DIODE 1S1555
D754	408 007 8607	DIODE 1N4148
	OR 407 013 1206	DIODE 1S1555
D755	408 007 8607	DIODE 1N4148
	OR 407 013 1206	DIODE 1S1555

Ref. No.	Part No.	Description
D756	408 007 8607	DIODE 1N4148
	OR 407 013 1206	DIODE 1S1555
D757	408 007 8607	DIODE 1N4148
	OR 407 013 1206	DIODE 1S1555
D758	408 007 8607	DIODE 1N4148
	OR 407 013 1206	DIODE 1S1555
D759	407 048 2001	ZENER DIODE EQA02-06B
D771	407 116 6504	LED SLP-181B-51
D783	407 048 2001	ZENER DIODE EQA02-06B

MISCELLANEOUS

F301A	610 014 8956	FUSE CLIP
F301B	610 014 8956	FUSE CLIP
TH771	407 015 0009	THERMISTOR SDT-20-CTV
A101	610 215 9219	UHF VARACTOR TUNER
D742	409 013 0104	IC HZ133
	OR 409 026 8005	IC L5630
	OR 409 057 5103	IC UPC574J
D771A	610 222 0322	LED HOLDER-G2CA-A
⚠ F301	423 006 1404	FUSE 250V 2A
IC171-D	411 045 6702	SCR PAN+SW 3X8
IC171A	610 091 1482	HEAT SINK-D5VA
IC171B	411 004 4404	NUT HEX 3
IC431-D	411 045 2803	SCR PAN+SW 3X12
IC431B	411 004 4404	NUT HEX 3
IC431GR	610 077 7781	SILICON GREASE
KDY-1	610 014 3364	M/C TERMINAL PLUG
KDY-2	610 014 3364	M/C TERMINAL PLUG
KDY-3	610 014 3364	M/C TERMINAL PLUG
KDY-4	610 014 3364	M/C TERMINAL PLUG
KG-1	610 014 3364	M/C TERMINAL PLUG
KG-2	610 014 3364	M/C TERMINAL PLUG
KL	610 010 7755	SOCKET 7P
KM	610 010 7748	SOCKET 6P
KN	610 010 7724	SOCKET 4P
KP	610 010 6000	RCA JACK 1P
KQ	610 225 2361	SOCKET 21P
	OR 610 218 6673	SOCKET 21P
	OR 610 009 8275	SOCKET 21P
KS	610 010 7960	HOUSING PLUG 2P
KSC	610 014 3364	M/C TERMINAL PLUG
KW	610 010 7991	HOUSING PLUG 5P
KX	610 010 7977	HOUSING PLUG 3P
K1	610 014 3364	M/C TERMINAL PLUG
PS301	408 000 3906	TH PTH451A13BG180M270
DEG THERM OR	408 003 6805	THERMISTOR 902P44E180MR14
Q303-A	610 216 2905	POWER H.S.ASSY. E4PC
Q303-D	411 045 2803	SCR PAN+SW 3X12
Q303B	411 004 4404	NUT HEX 3
Q303GR	610 077 7781	SILICON GREASE
Q452-A	610 216 2912	HOR.H.S.ASSY.E4PC
Q452-D	411 045 2803	SCR PAN+SW 3X12
Q452-F	610 130 5549	WIRE HOLDER D13-AWZ
Q452-G	412 031 0605	SPECIAL SCREW
Q452B	411 004 4404	NUT HEX 3
Q452GR	610 077 7781	SILICON GREASE
RC771	610 207 5137	PREAMP 408-1T/1A/1C/1D
	OR 610 214 4833	RC PREAMP 409-1A/1B
SW131	610 011 2728	LEVER SWITCH
SW201	610 011 2728	LEVER SWITCH
SW301	610 011 3336	PUSH SWITCH ON/OFF
SW401	610 011 2728	LEVER SWITCH
SW701	610 011 4456	PUSH SWITCH
SW702	610 011 4456	PUSH SWITCH
SW703	610 011 4432	PUSH SWITCH
TP-A	610 014 3364	M/C TERMINAL PLUG
TP-B	610 014 3364	M/C TERMINAL PLUG
TP-D	610 014 3364	M/C TERMINAL PLUG
TP-F	610 014 3364	M/C TERMINAL PLUG
TP-G	610 014 3364	M/C TERMINAL PLUG
TP-H	610 014 3364	M/C TERMINAL PLUG
TP-J	610 014 3364	M/C TERMINAL PLUG
TP-Q	610 010 7984	HOUSING PLUG 4P
TP-V	610 010 7977	HOUSING PLUG 3P

Ref.No.	Part No.	Description
TP-W	610 010 7977	HOUSING PLUG 3P
VC231	610 003 0381	TRIMMER CONDENSER
X101	421 001 8800	SAW F TSF1326M
X131	610 015 2885	CERAMIC FILTER
X141	610 015 2908	CERAMIC FILTER
X231	610 211 9633	CRYSTAL OSCILLATOR
	OR 610 012 1850	CRYSTAL OSCILLATOR
	OR 610 012 2734	CRYSTAL OSCILLATOR
X761	610 012 2857	CERAMIC OSCILLATOR
	OR 610 212 8765	CERAMIC OSCILLATOR
	OR 610 217 4984	CERAMIC OSCILLATOR
Z201	610 216 1199	SOCKET MTG BRKT-E4PC

610 205 7553(CRT UNIT D8PS)

TRANSISTORS

Q601	405 015 3501	TR 2SC2688(2)-K
	OR 405 015 3600	TR 2SC2688(2)-L
	OR 405 015 3709	TR 2SC2688(2)-M
Q611	405 015 3501	TR 2SC2688(2)-K
	OR 405 015 3600	TR 2SC2688(2)-L
	OR 405 015 3709	TR 2SC2688(2)-M
Q621	405 015 3501	TR 2SC2688(2)-K
	OR 405 015 3600	TR 2SC2688(2)-L
	OR 405 015 3709	TR 2SC2688(2)-M
Q640	405 004 4205	TR 2SA608-E-CTV-NP
	OR 405 004 4809	TR 2SA608-F-CTV-NP
	OR 405 028 7909	TR 2SA608-G-CTV-NP

CAPACITORS

C601	403 073 6403	CERAMIC	470P K	50V
C611	403 073 2900	CERAMIC	390P K	50V
C621	403 073 2900	CERAMIC	390P K	50V
C631	403 077 2708	CERAMIC	1000P P	2K

RESISTORS

R601	401 019 1000	CARBON	390 JA	1/4W
R602	401 020 2003	CARBON	4.7K JA	1/4W
R603	401 022 1905	CARBON	680 JA	1/4W
R604	401 065 4604	OXIDE-MT	12K JA	2W
R605	401 002 0102	SOLID	3.3K KA	1/2W
R611	401 019 1000	CARBON	390 JA	1/4W
R612	401 020 2003	CARBON	4.7K JA	1/4W
R613	401 016 3809	CARBON	2.2K JA	1/4W
R614	401 065 4604	OXIDE-MT	12K JA	2W
R615	401 002 0102	SOLID	3.3K KA	1/2W
R621	401 019 1000	CARBON	390 JA	1/4W
R622	401 020 2003	CARBON	4.7K JA	1/4W
R623	401 015 2704	CARBON	1.8K JA	1/4W
R624	401 065 4604	OXIDE-MT	12K JA	2W
R625	401 002 0102	SOLID	3.3K KA	1/2W
R627	401 020 0801	CARBON	470 JA	1/4W
R630	401 002 0102	SOLID	3.3K KA	1/2W
R631	401 001 7607	SOLID	270K KA	1/2W
R641	401 020 2003	CARBON	4.7K JA	1/4W
R642	401 014 4105	CARBON	1.5K JA	1/4W

VARIABLE RESISTORS

VR601	610 019 2348	VR B-1K
	OR 610 019 2355	VR B-1K
VR602	610 019 0092	VARIABLE RESISTOR
	OR 610 019 0108	VARIABLE RESISTOR
VR611	610 019 2348	VR B-1K
	OR 610 019 2355	VR B-1K
VR612	610 019 0092	VARIABLE RESISTOR
	OR 610 019 0108	VARIABLE RESISTOR
VR622	610 019 0092	VARIABLE RESISTOR
	OR 610 019 0108	VARIABLE RESISTOR
VR640	610 019 2348	VR B-1K
	OR 610 019 2355	VR B-1K

Ref.No.	Part No.	Description

COILS

L601	610 032 0895	INDUCTOR

MISCELLANEOUS

KTP6A	610 014 3364	M/C TERMINAL PLUG
KTP6B	610 014 3364	M/C TERMINAL PLUG
KTP6C	610 014 3364	M/C TERMINAL PLUG
KTP6E	610 014 3364	M/C TERMINAL PLUG
KTP6F	610 014 3364	M/C TERMINAL PLUG
KTP6M	610 014 3364	M/C TERMINAL PLUG
K6P	610 010 7991	HOUSING PLUG 5P
K6Q	610 010 7977	HOUSING PLUG 3P
K6S	610 012 5018	HOLDER 1P
K601	610 010 3986	CRT SOCKET

610 215 2937(TELETEXT UNIT-E4PC)

TRANSISTORS

Q1031	406 007 2106	TR JC546A
	OR 406 007 2007	TR JC546B
	OR 405 019 1909	TR 2SC536-E-NP
	OR 405 019 2708	TR 2SC536-F-NP
	OR 405 019 3804	TR 2SC536-G-NP
Q1032	406 007 2106	TR JC546A
	OR 406 007 2007	TR JC546B
	OR 405 019 1909	TR 2SC536-E-NP
	OR 405 019 2708	TR 2SC536-F-NP
	OR 405 019 3804	TR 2SC536-G-NP
Q1033	406 007 2106	TR JC546A
	OR 406 007 2007	TR JC546B
	OR 405 019 1909	TR 2SC536-E-NP
	OR 405 019 2708	TR 2SC536-F-NP
	OR 405 019 3804	TR 2SC536-G-NP
Q1041	406 007 2106	TR JC546A
	OR 406 007 2007	TR JC546B
	OR 405 019 1909	TR 2SC536-E-NP
	OR 405 019 2708	TR 2SC536-F-NP
	OR 405 019 3804	TR 2SC536-G-NP
Q1051	406 007 1901	TR JC556A
	OR 406 007 1802	TR JC556B
	OR 405 004 4205	TR 2SA608-E-CTV-NP
	OR 405 004 4809	TR 2SA608-F-CTV-NP
	OR 405 028 7909	TR 2SA608-G-CTV-NP
Q1052	406 007 2106	TR JC546A
	OR 406 007 2007	TR JC546B
	OR 405 019 1909	TR 2SC536-E-NP
	OR 405 019 2708	TR 2SC536-F-NP
	OR 405 019 3804	TR 2SC536-G-NP

INTEGRATED CIRCUITS

IC1011	409 107 8108	IC SAA5231
IC1031	410 051 0506	IC SAA5243P/E-M2
IC1032	409 012 7708	IC HM6264P-15
	OR 409 166 7302	IC LC3564P-15
	OR 409 143 1705	IC LC3564PL-15
	OR 409 120 4101	IC LC3664N-10
	OR 409 089 6000	IC LC3664N-12
	OR 409 163 1501	IC LC3664N-85
	OR 409 120 4200	IC LC3664NL-10
	OR 409 089 6109	IC LC3664NL-12
	OR 409 163 1402	IC LC3664NL-85
	OR 409 073 4906	IC TC5565PL-15
	OR 409 162 7504	IC TMM2064AP-10
	OR 409 162 7405	IC TMM2064AP-12
	OR 409 054 3706	IC TMM2064P-10
	OR 409 138 7705	IC UPD4364C-15
IC1051	410 039 5905	IC MAB8461PW115
IC1052	410 019 6403	IC PCD8572P
IC1053	410 067 3102	IC HEF4006B

Ref. No.	Part No.	Description
	OR 409 185 0100	IC MC14006B
	OR 409 184 9906	IC MN4006B
	OR 409 050 7906	IC TC4006BP
	OR 409 184 8909	IC UPD4006BC
IC1054	409 020 6601	IC LC4001B
	OR 409 050 7807	IC TC4001BP
IC1055	409 020 6908	IC LC4011B
	OR 409 050 8309	IC TC4011BP
CAPACITORS		
C1011	403 069 8305	CERAMIC 0.01U Z 50V
C1012	403 043 9106	ELECT 47U M 16V
C1013	403 019 7709	CERAMIC 27P J 50V
C1014	403 012 4309	CERAMIC 15P J 50V
C1016	403 009 3407	CERAMIC 100P J 50V
C1017	403 072 4400	CERAMIC 270P K 50V
C1018	403 059 5000	POLYESTER 0.022U J 50V
	OR 403 059 5703	POLYESTER 0.022U J 50V
	OR 403 179 2507	POLYESTER 0.022U J 50V
C1019	403 073 6403	CERAMIC 470P K 50V
C1021	403 069 0507	CERAMIC 1000P K 50V
C1022	403 012 4309	CERAMIC 15P J 50V
C1023	403 067 8208	MT-COMPO 0.068U J 50V
C1024	403 071 5606	CERAMIC 220P K 50V
C1025	403 086 5400	NP-ELECT 2.2U M 50V
C1026	403 067 7706	MT-COMPO 0.047U J 50V
C1027	403 043 9106	ELECT 47U M 16V
C1028	403 067 7706	MT-COMPO 0.047U J 50V
C1029	403 067 7706	MT-COMPO 0.047U J 50V
C1030	403 069 8305	CERAMIC 0.01U Z 50V
C1031	403 067 5603	MT-COMPO 0.1U J 50V
C1032	403 043 9106	ELECT 47U M 16V
C1033	403 043 9106	ELECT 47U M 16V
C1051	403 022 5907	CERAMIC 33P J 50V
C1052	403 022 5907	CERAMIC 33P J 50V
C1053	403 069 8305	CERAMIC 0.01U Z 50V
C1054	403 043 9106	ELECT 47U M 16V
C1056	403 069 8305	CERAMIC 0.01U Z 50V
C1061	403 071 7402	CERAMIC 2200P K 50V
RESISTORS		
R1011	401 024 6700	CARBON 100 JA 1/6W
R1012	401 024 9305	CARBON 1.2K JA 1/6W
R1013	401 024 6700	CARBON 100 JA 1/6W
R1014	401 027 5908	CARBON 68K JA 1/6W
R1016	401 027 8107	CARBON 82 JA 1/6W
R1017	401 026 4308	CARBON 3.3K JA 1/6W
R1031	401 025 7805	CARBON 2.2K JA 1/6W
R1032	401 026 4308	CARBON 3.3K JA 1/6W
R1033	401 027 6608	CARBON 75 JA 1/6W
R1034	401 025 7805	CARBON 2.2K JA 1/6W
R1036	401 026 4308	CARBON 3.3K JA 1/6W
R1037	401 027 6608	CARBON 75 JA 1/6W
R1038	401 025 7805	CARBON 2.2K JA 1/6W
R1039	401 026 4308	CARBON 3.3K JA 1/6W
R1041	401 027 6608	CARBON 75 JA 1/6W
R1042	401 027 5908	CARBON 68K JA 1/6W
R1043	401 026 4308	CARBON 3.3K JA 1/6W
R1044	401 027 6608	CARBON 75 JA 1/6W
R1047	401 024 7400	CARBON 10K JA 1/6W
R1051	401 027 9005	CARBON 82K JA 1/6W
R1052	401 026 9907	CARBON 4.7K JA 1/6W
R1053	401 024 7400	CARBON 10K JA 1/6W
R1054	401 027 2303	CARBON 560 JA 1/6W
R1055	401 024 8001	CARBON 1M JA 1/6W
R1056	401 025 4200	CARBON 1.8K JA 1/6W
R1057	401 026 9600	CARBON 470 JA 1/6W
R1058	401 026 9600	CARBON 470 JA 1/6W
R1059	401 026 9907	CARBON 4.7K JA 1/6W
R1061	401 026 9600	CARBON 470 JA 1/6W
R1062	401 024 7400	CARBON 10K JA 1/6W
R1063	401 026 9907	CARBON 4.7K JA 1/6W
R1064	401 026 9907	CARBON 4.7K JA 1/6W

Ref. No.	Part No.	Description
R1066	401 024 7400	CARBON 10K JA 1/6W
R1067	401 024 7400	CARBON 10K JA 1/6W
R1068	401 024 7400	CARBON 10K JA 1/6W
R1069	401 024 7400	CARBON 10K JA 1/6W
TRANSFORMERS		
T1011	610 037 7547	S TRANS
COILS		
L1011	610 031 3958	PEAKING COIL
L1012	610 031 4177	PEAKING COIL
L1031	610 031 4542	PEAKING COIL
L1032	610 031 4542	PEAKING COIL
L1041	610 031 4542	PEAKING COIL
DIODES		
D1041	407 012 5809	DIODE 1SS176
D1051	407 012 5809	DIODE 1SS176
D1052	407 012 5809	DIODE 1SS176
D1053	407 055 7907	ZENER DIODE RD3.6EL
MISCELLANEOUS		
K10L	610 010 7823	PLUG 7P
K10M	610 010 7816	PLUG 6P
K10N	610 010 7793	PLUG 4P
X1011	610 012 1706	CRYSTAL OSCILLATOR
	OR 610 211 4218	CRYSTAL OSCILLATOR
	OR 610 211 6458	CRYSTAL OSCILLATOR
X1051	610 224 6346	CERAMIC OSCILLATOR KBR-6.
	OR 610 012 0563	CERAMIC OSCILLATOR
Z1001	610 216 6323	TEXT MTG BRKT-E4PC

(OUT OF CIRCUIT BOARDS)

PICTURE TUBE		
⚠ Q901	414 005 4404	CRT A51EBV12X09
COILS		
⚠ L901	610 030 4437	DEGAUSSING COIL
	OR 610 204 8537	DEGAUSSING COIL
	OR 610 221 9647	DEGAUSSING COIL
MISCELLANEOUS		
KDY	610 013 9596	MINI CONNECTOR 5P-SOCKET
KDY-1	610 013 9404	M/C TERMINAL SOCKET
KDY-2	610 013 9404	M/C TERMINAL SOCKET
KDY-3	610 013 9404	M/C TERMINAL SOCKET
KDY-4	610 013 9404	M/C TERMINAL SOCKET
KFOP	610 155 9720	LEAD HOLDER-SMA
KFOS1	610 013 7882	TERMINAL SOCKET-L
KS	610 010 8059	HOUSING 2P
KS-1	610 010 8141	TERMINAL SOCKET
KS-2	610 010 8141	TERMINAL SOCKET
KSC	610 013 9442	MINI CONNECTOR 1P-SOCKET
KSC-1	610 013 9404	M/C TERMINAL SOCKET
KW	610 010 8080	HOUSING 5P
KW-1	610 010 8141	TERMINAL SOCKET
KW-2	610 010 8141	TERMINAL SOCKET
KW-3	610 010 8141	TERMINAL SOCKET
KW-4	610 010 8141	TERMINAL SOCKET
KW-5	610 010 8141	TERMINAL SOCKET
KX	610 010 8066	HOUSING 3P
KX-1	610 010 8141	TERMINAL SOCKET
KX-2	610 010 8141	TERMINAL SOCKET
KX-3	610 010 8141	TERMINAL SOCKET
K6P	610 010 8080	HOUSING 5P
K6P-1	610 010 8141	TERMINAL SOCKET

Ref. No.	Part No.	Description
K6P-2	610 010 8141	TERMINAL SOCKET
K6P-3	610 010 8141	TERMINAL SOCKET
K6P-4	610 010 8141	TERMINAL SOCKET
K6P-5	610 010 8141	TERMINAL SOCKET
K6Q	610 010 8066	HOUSING 3P
K6Q-1	610 010 8141	TERMINAL SOCKET
K6Q-2	610 010 8141	TERMINAL SOCKET
K6Q-3	610 010 8141	TERMINAL SOCKET
MO.1	610 013 9404	M/C TERMINAL SOCKET
NO.2	610 013 9442	MINI CONNECTOR IP-SOCKET
SP901	610 219 0038	SPEAKER
⚠ W901	610 011 7068	AC CORD
W902	610 024 2531	GROUNDING CONNECTOR
Z1	610 082 4966	GROUNDING SPRING-8GAP

Ref. No.	Part No.	Description

0302		
	VOLT.	WAVEFORM
B	0.1V	3.2Vp-p
C	0.3V	2.5Vp-p
E	0V	———

SERVICE PRECAUTION:

THE AREA ENCLOSED BY THIS LINE (⚠) IS DIRECTLY CONNECTED WITH AC MAINS VOLTAGE. WHEN SERVICING THE AREA, CONNECT AN ISOLATING TRANSFORMER BETWEEN TV RECEIVER AND AC LINE TO ELIMINATE HAZARD OF ELECTRIC SHOCK.

AKAI

COLOUR TELEVISION

E4 CHASSIS SERIES

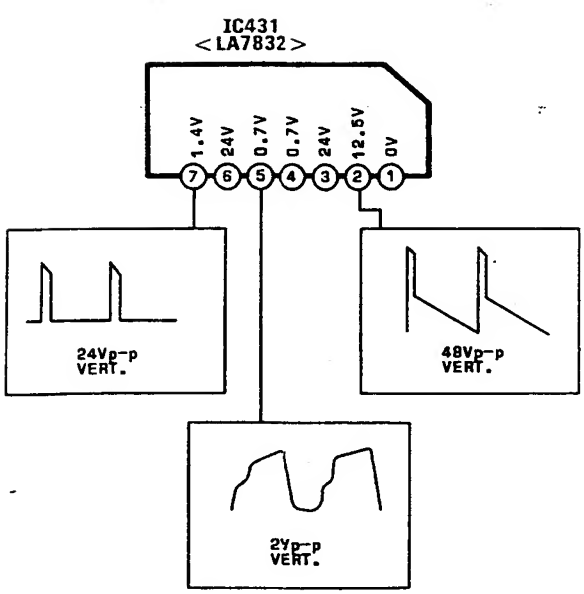
SERVICE REF. NO. CT2158-00 CT2160-00

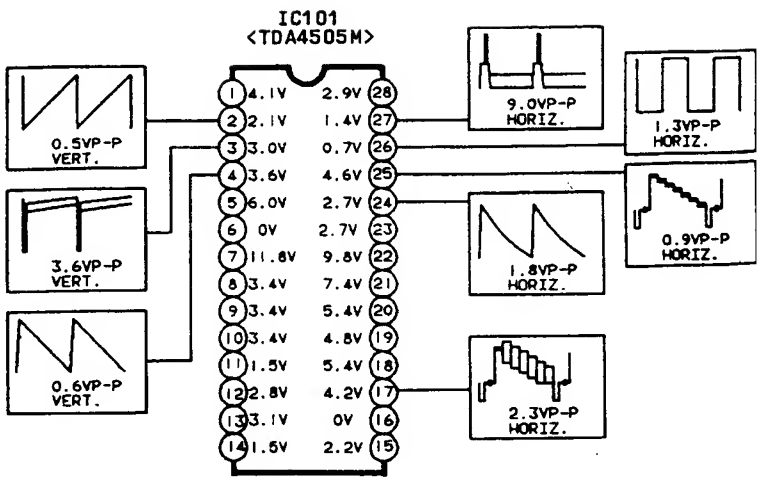
PRODUCT SAFETY NOTICE

Product safety should be considered when a component replacement is made in any area of a receiver. Components indicated by a mark ⚠ in this circuit diagram show components whose value have special significance to product safety. It is particularly recommended that only parts specified on the parts list of service manual be used for components replacement pointed out by the mark.

CIRCUIT DIA

1 All resistan
2 Excepting
1 are expre
Electrolyti
3 All inducta
4 Voltage re
chassis grou
Voltage re
normal, AF
with signal
5 Waveforms
justed for
band oscill
6 This circui
There may
between ac





Q302		
	VOLT.	WAVEFORM
B	0.1V	3.2Vp-p
C	0.3V	2.5Vp-p
E	0V	-----

Q303		
	VOLT.	WAVEFORM
B	0.3V	2.5Vp-p
C	295V	600Vp-p
E	0.45V	-----

Q122		
	VOLT.	WAVEFO
B	4.2V	2.6VP HORIZ
C	11.9V	------
E	3.5V	2.6VP- HORIZ.

ELEVISION

HASSIS SERIES

2158-00
2160-00

PRODUCT SAFETY NOTICE

Product safety should be considered when a component replacement is made in any area of a receiver. Components indicated by a mark ⚠ in this circuit diagram show components whose value have special significance to product safety. It is particularly recommended that only parts specified on the parts list of service manual be used for components replacement pointed out by the mark.

CIRCUIT DIAGRAM NOTES:

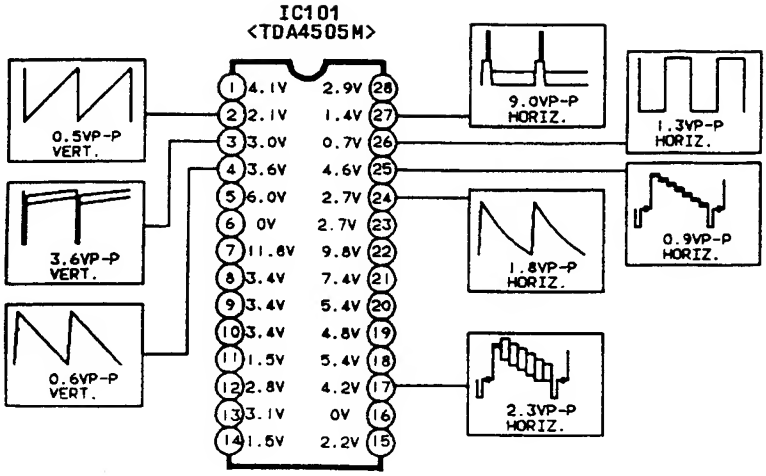
1. All resistance values in ohms K = 1,000 M = 1,000,000
2. Excepting electrolytic capacitor, all capacitance values less than 1 are expressed in μF, and the values more than 1 are in pF. Electrolytic capacitance values in μF
3. All inductance values in μH
4. Voltage reading taken with "TESTER" from point indicated to chassis ground. Voltage reading taken using colour bar signal, all controls at normal, AFT switch in "OFF" position. Some voltage may vary with signal strength.
5. Waveforms were taken with colour bar signal and controls adjusted for normal picture. Waveforms were taken using a wide band oscilloscope and low capacity probe.
6. This circuit diagram covers basic or representative chassis only. There may be some component or partial circuit difference between actual chassis and circuit diagram.

Expression of capacitance and

CAPACITANCE (Example)
1000 C M 2200 Q

RESISTANCE (Example)
1/2 N J 1.2

IC101
<TDA4505M>



Q451		
	VOLT.	WAVEFORM
B	0.36V	0.7VP-P HORIZ.
C	14.5V	46VP-P HORIZ.
E	0V	------

Q452		
	VOLT.	WAVEFORM
B	-0.05V	1.0VP-P HORIZ.
C	98.0V	820VP-P HORIZ.
E	0V	------

Q303		
	VOLT.	WAVEFORM
B	0.3V	2.5Vp-p
C	295V	600Vp-p
E	0.45V	-----

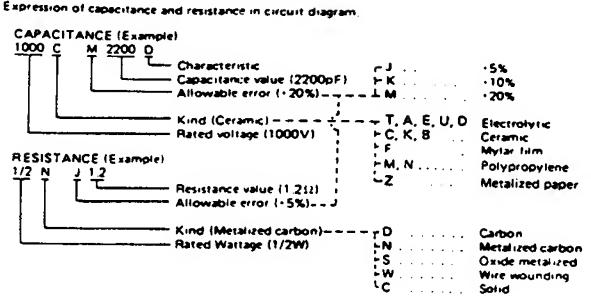
Q122		
	VOLT.	WAVEFORM
B	4.2V	2.6VP-P HORIZ.
C	11.9V	------
E	3.5V	2.6VP-P HORIZ.

Q131		
	VOLT.	WAVEFORM
B	1.5V	1.1VP-P HORIZ.
C	0V	------
E	2.2V	1.1VP-P HORIZ.

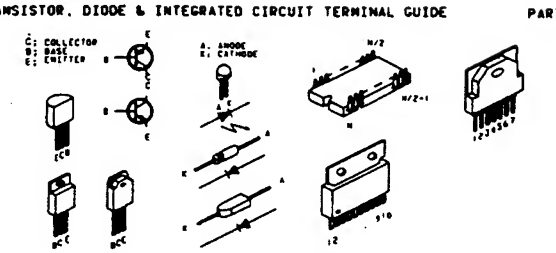
GRAM NOTES:

ce values in ohms K = 1,000 M = 1,000,000
electrolytic capacitor, all capacitance values less than
ssed in μF, and the values more than 1 are in pF
capacitance values in μF
nce values in μH
ding taken with "TESTER" from point indicated to
nd
ding taken using colour bar signal, all controls at
T switch in "OFF" position. Some voltage may vary
strength
were taken with colour bar signal and controls ad
normal picture. Waveforms were taken using a wide
scope and low capacity probe
diagram covers basic or representative chassis only.
be some component or partial circuit difference
ual chassis and circuit diagram

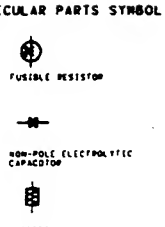
Expression of capacitance and resistance in circuit diagram.



TRANSISTOR, DIODE & INTEGRATED CIRCUIT TERMINAL GUIDE



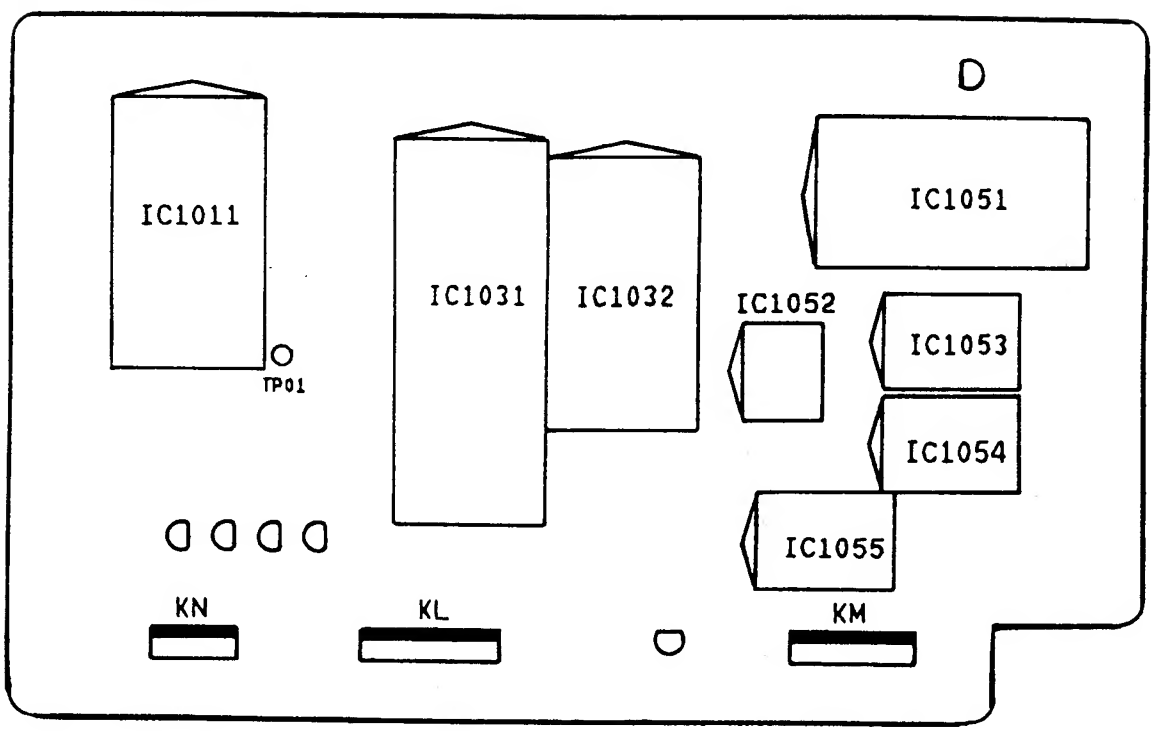
PARTICULAR PARTS SYMBOL



Q451		
	VOLT.	WAVEFORM
B	0.36V	0.7VP-P HORIZ.
C	14.5V	46VP-P HORIZ.
E	0V	------

Q452		
	VOLT.	WAVEFORM
B	-0.05V	1.0VP-P HORIZ.
C	98.0V	820VP-P HORIZ.
E	0V	------

TELETEXT BOARD



SERVICE REF. NO. CT2158-20, CT2160-20

CHASSIS ELECTRICAL PARTS LIST.

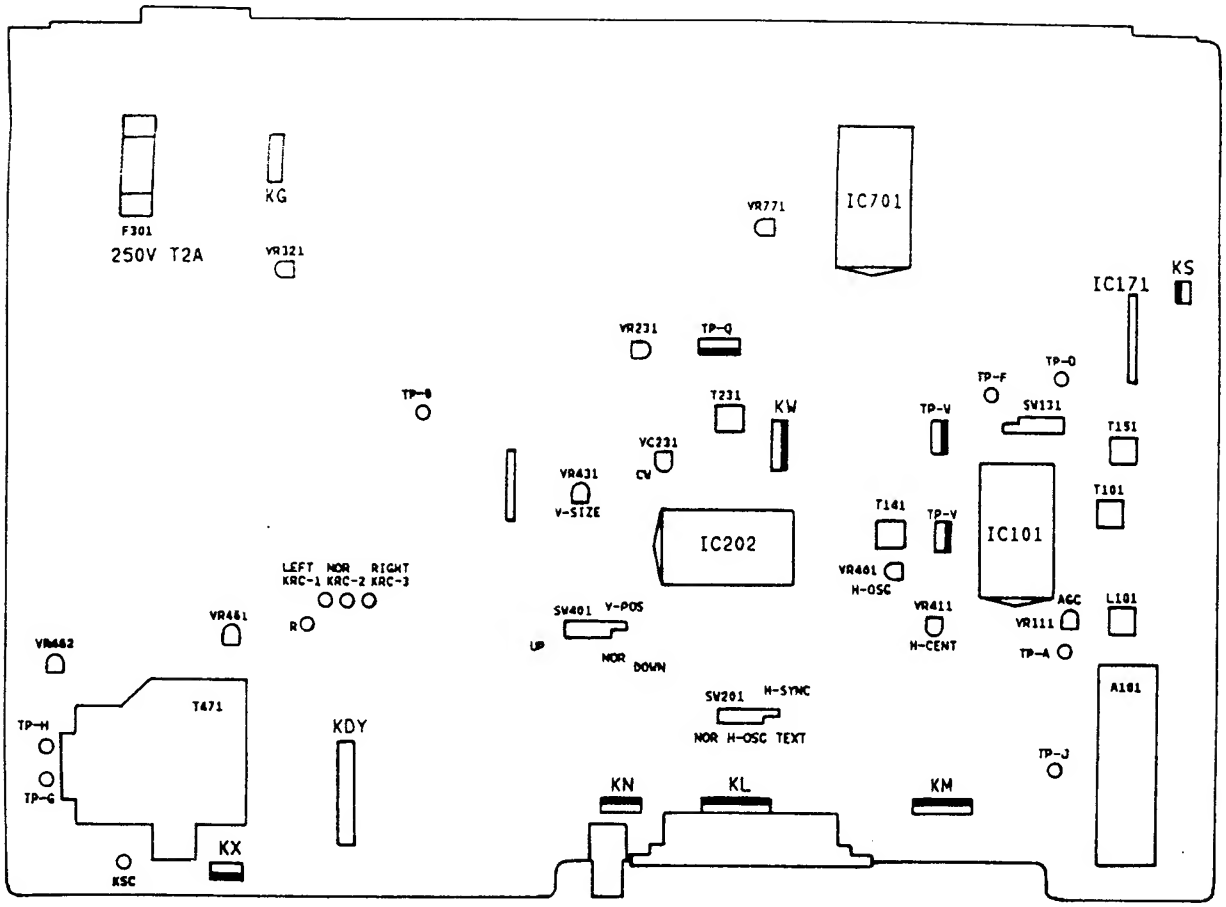
NOTE: The differences are printed in this parts list between SERVICE REF.NO CT2158-00, CT2160-00.
Refer to CT2158-00,CT2160-00 Service Manual for all the items not given in this parts list.
Parts order must contain MODEL NO., REF NO. and DESCRIPTION.

Ref No.	Part No.	Description
610 230 9317 (UE2019M)		
(MAIN UNIT - E48ET)		
CAPACITORS		
C441	403 082 8009	POLYPRO 0.2U J 200V
C442	403 082 7408	POLYPRO 0.15U J 200V
C457	403 030 6900	MT-POLYPRO 6000P J 1.5K
	OR 404 030 7006	MT-POLYPRO 6000P J 1.5K
COILS		
L441	N/A	
610 046 3424 (UE1668)		
(CRT UNIT D8PC)		
RESISTORS		
L601	610 032 1267	INDUCTOR
(OUT OF CIRCUIT BOARDS)		
PICTURE TUBE		
Q901	414 001 3500	CRT A51JRU40X02(MW)

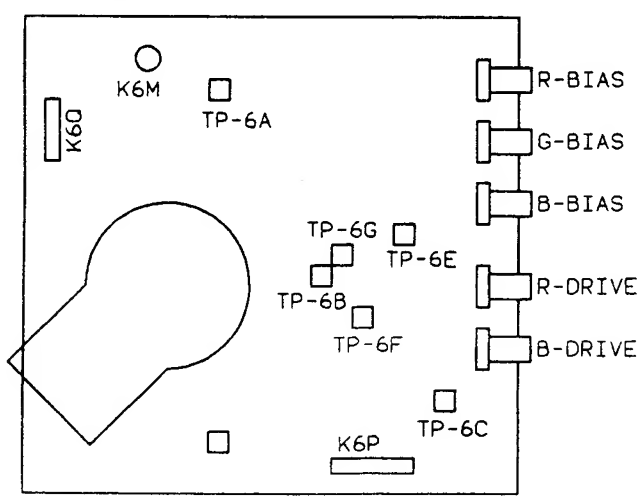
Ref No.	Part No.	Description

COMPONENT LOCATION

MAIN BOARD



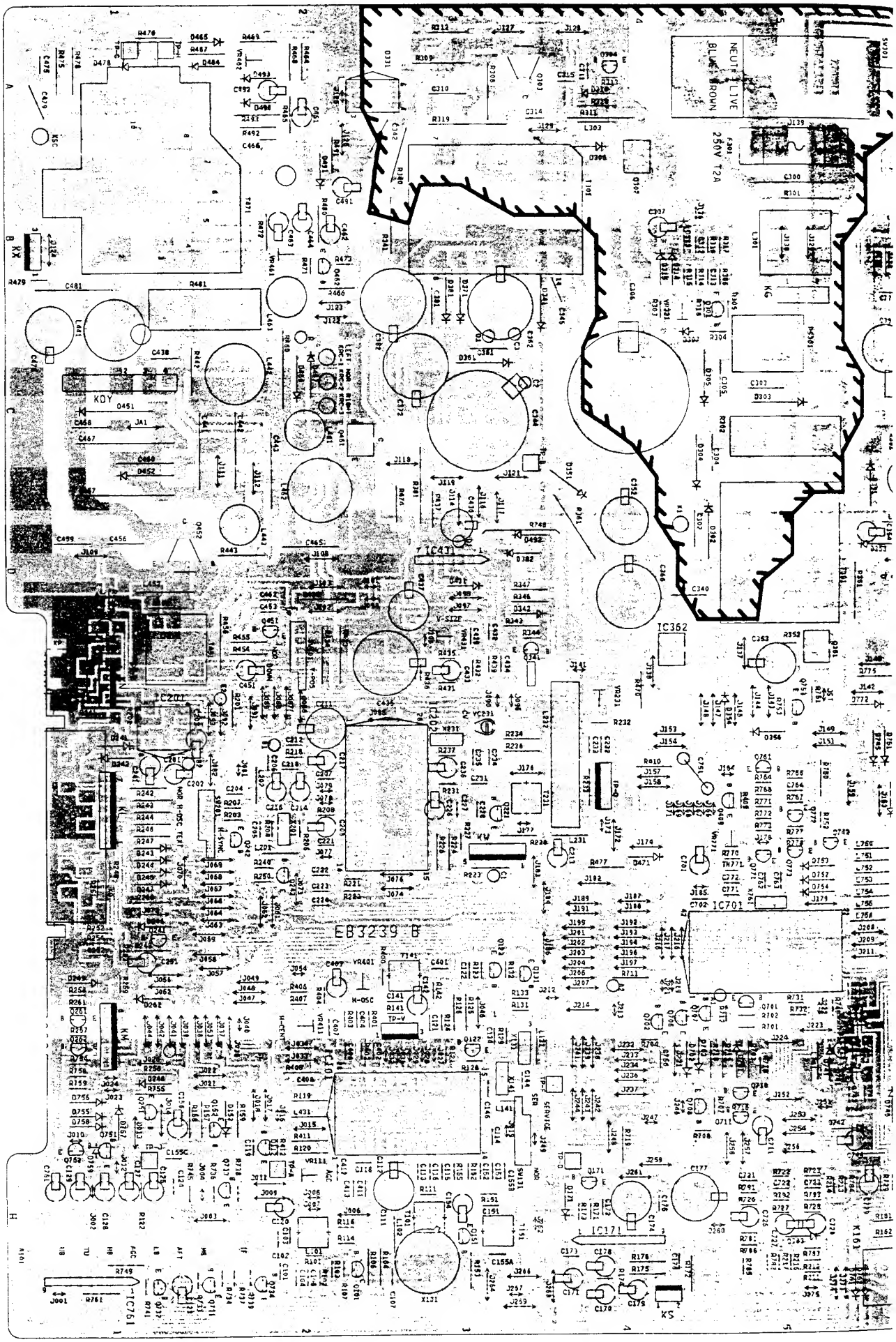
CRT BOARD

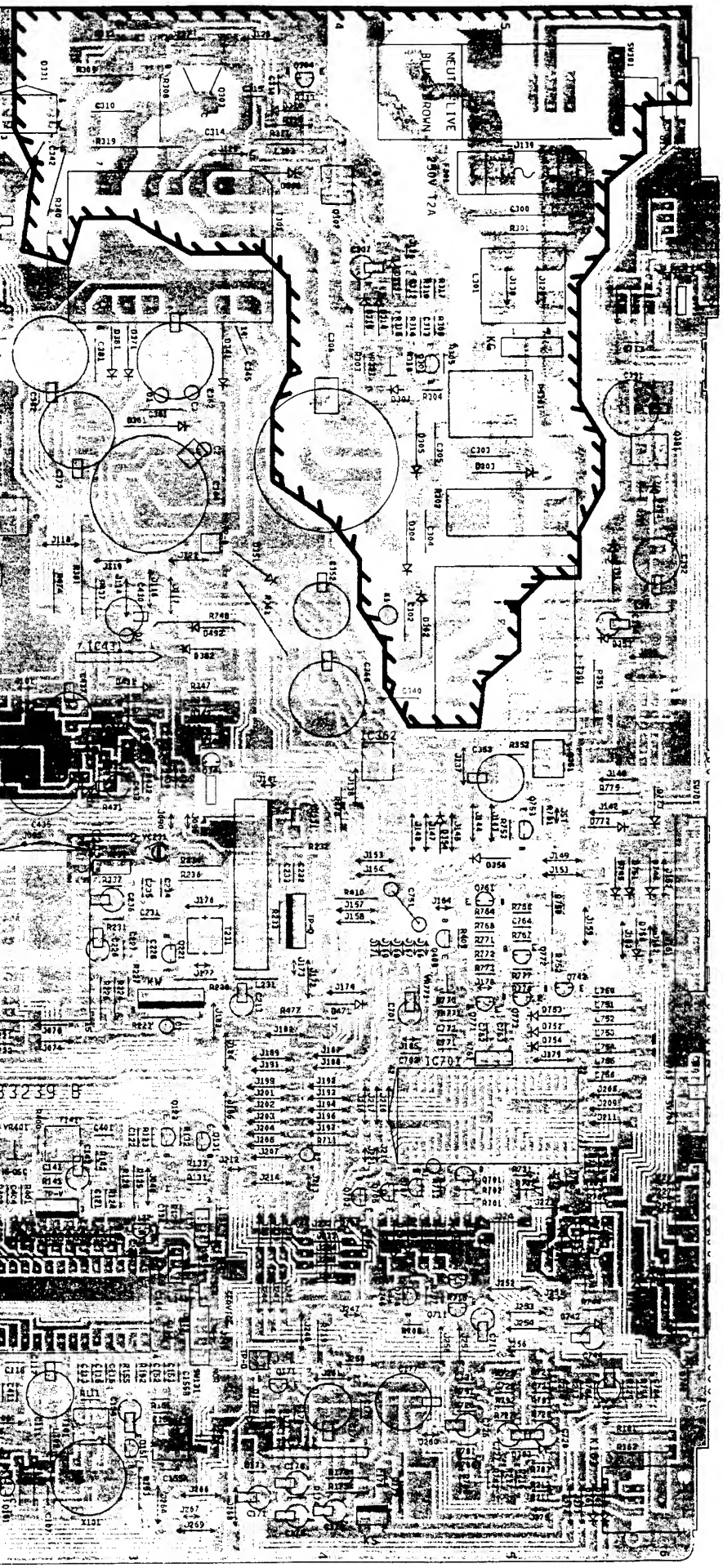


PRINTED CIRCUIT BOARD DIAGRAMS

MAIN BOARD

COMPONENT SIDE





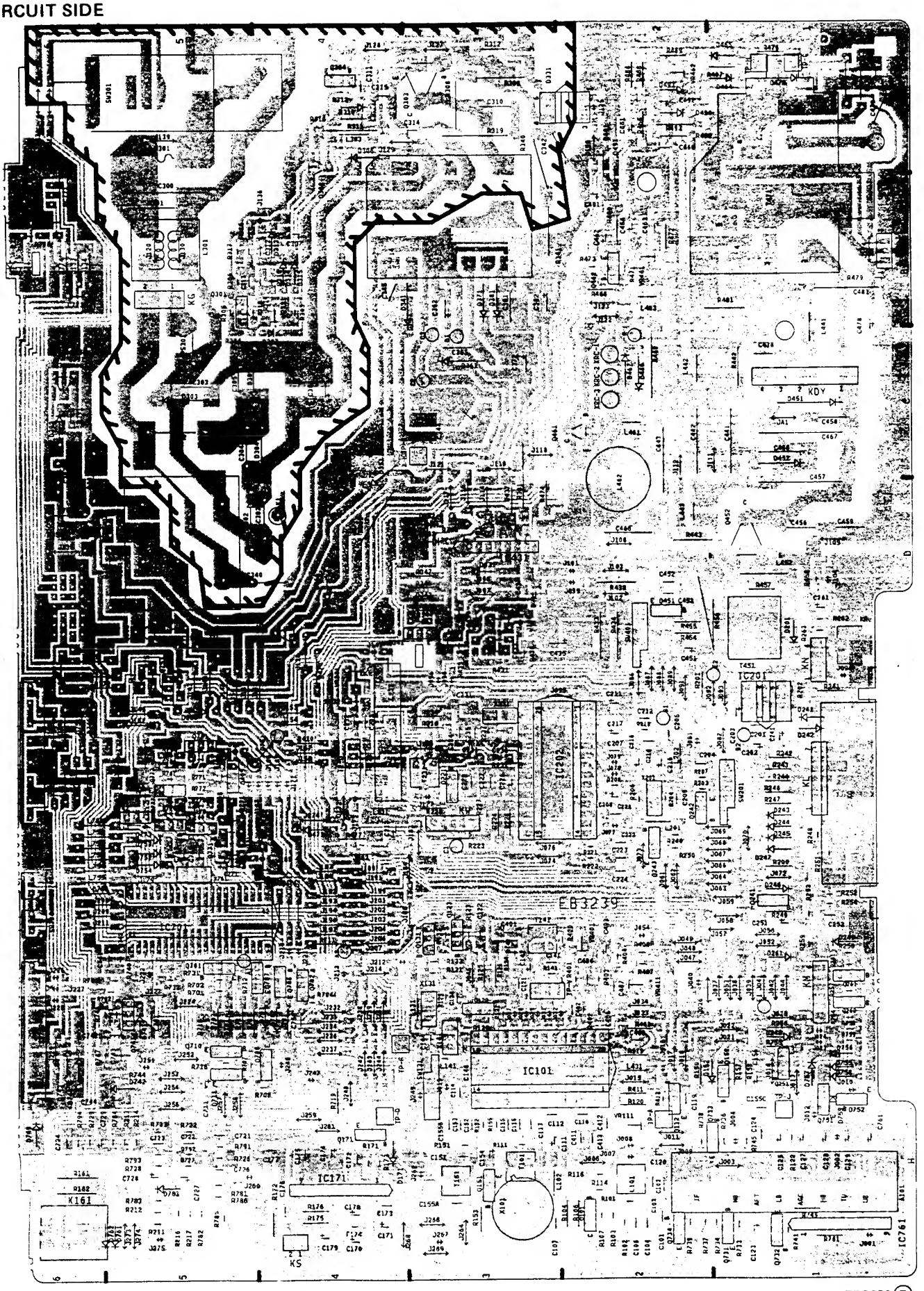
COMPONENT LOCATION DIA

Pin		IC A	Q	D	C			
TP-G			304	465				
				478				
TP-H			303	331	475		311	
KSC				464				
				493	492	310	315	
				490				
				310	479	461	314	
				491		342		
				306				
				463		466		
				462				
				461				
				313				
			302	771				
				314				
				315				30
						491		
						462		
						464	307	
KX	KG		462	371		463	312	
				381				
				341	481	381	345	
				307			306	
							313	77
					478	382	361	39
							362	
			301		438			
				361				
				467				
				456				
			391	305				
				303				
				451			344	30
				392				
KDY			461	304	442	372	304	30
				452				
				351	441	443		
				391				39
					458			
					467			
	TP-B							
					460			
					457		383	
							352	
							302	35
			452		459	465		
					456	436	366	
							340	
		IC431		492	261	452		
			451	302		453		
				353				
				382		437	432	
		IC362	341	342		439	434	
			351	201				
KP						433		35
						451		
			753	773				
				772		435	232	
KN		IC201		354	203			
				241		211	233	
V-POS		IC202		744				
				751		212		
				242				
				745				
				356				
					201	218	234	
						206		
					241	235		
						217		
					202	207		76
						236		
KL	TP-Q		761	750	204	231		
			221	243		216		
			409	244		214	213	77
			772	753		227	701	
			242	245		226		77
	KW		742	247		228		
			773	752		208	702	76
			771	246		205		
			243	754		221		76
			241			222		
KQ			123			223		
			131			224		
						401		
					252	403		74
		IC701				122		
						142		
					251	141		
						404		
						121		74
						407		
						402		
						406		
						408		74
TP-V	TP-W		261	249				
KM			707	261				
			701					
			282					
			122					
			706	703				
			702	702			134	
			741	701	156			
			708	248				
	TP-F	IC101	710	741			144	
			251	756			146	
			711	755				
			152	743				
			112	746				
			171	152	155	119	114	71
			751	742		112	152	74
			733	758		412	153	
			752	757		118	155B	72
			151	749		113	177	72
TP-A	TP-D			171	761	116	175	72
				783		115	172	72
					129	411	151	
						413	174	72
		A101			124	154	173	72
		IC171				111	178	72
					125	120	155A	72
						103	176	
					127	102	171	
		IC761	734	761		101	170	
			101		128	104	179	
			731			106		
			732			107		
	KS				123			

COMPONENT LOCATION DIAGRAM

Pin		IC A	Q	D	C				R				L, F T X	VR VC SW, PS
TP-G			304	465					476	312				SW301
				478						469				
TP-H			303	331	475		311		478	464	308			VR462
				464						468	313			
KSC				493	492	310	315		475	309	310			
				490						319	311			
				310	479	481	314		467	465				
										493				
				491		342				492			L303	
				306						491			F301	
				463		466				462			T301	
				462						463				
				461						340			T471	
				313						480				
			302	771						472			L301	
				314						341				
				315						473				
								300		471				
						491				466				
						462					316			
							307					301		
						464						779		
												776		
KX	KG		462	371		463	312				314	317		VR461
				381							315	774		
				341	481	381	345		479		318	306		
				307			306		481		303	305		
							313	773			304			
									442					
					478	382	361	391	430	460			L463	
							362						L441	VR321
			301		438								L442	
				361										
				467										
				456										
			391	305										
				303										
				451			344	305						
				392										
KDY			461	304	442	372	304	303						PS301
				452										
				351	441	443							L461	
				391				392				391		
					458							302		
					467									
	TP-B													
					460									
					457		383			381			L462	
							352							
							302	354		474			L701	
			452		459	465					361		L443	
							366		443		748			
					456	436	340					351	T391	
						452			450		347			
		IC431		492					457		346		L452	
			451	302	261					438	343			
				353		453			456	433	344	352		
				382					455	434				
				431		437	432		454	435	439	775		
		IC362	341	342					262	432	477			
			351	201		439	434		263	436		751	T451	VR431
									201	431	232			
KP						433		353	202		234	753		SW401
									241		236			
			753	773		451					410			
				772							233			
				354		435	232							
KN		IC201		241	203								L232	SW701
				744		211	233						X231	
V-POS		IC202		751										
				242		212							L202	
				745										VC231
				356							228		T231	
														VR231
											223		X201	
					201	218	234			237		750	L231	
						206			242	218		786	L201	
					241	235			207	231		784	L750	
						217			243			788	L751	
					202	207		764	203			771	L752	
						236			244			772	L753	
KL	TP-Q		761	750	204	231			246	208		773	L754	
			221	243		216			247			409	L755	
			409	244		214	213	772	248	204		770	L756	SW201
			772	753		227	701		251	227		752	X761	
			242	245		226		771	200	206		767	T141	
	KW		742	247		228				224		777		VR771
			773	752		208	702	763		226		778		
			771	246		205				240				
			243	754		221		762		250				
			241			222				221				
KQ			123			223				222		742		
			131			224				403		731		
						401				401		740		
					252	403		741	252	400	132	732		SW703
		IC701				122			254	123		763		
						142			253	142	133	702		SW704
						141			249	406	131	762		
					251	404				404		712		VR401
						121		742	259	407	704	701	L131	
						407			258	125	710	713	L741	
						402			261	126	129	703	X131	
						406				141		746	L431	
						408		743	257	124	707	743	X141	
TP-V	TP-W		281	249						402	719	718		
			707	281					754	121	708	747		
KM			701						758	408		716		VR411
			262						256	128		744		
			122						759	119		722		
			706	703						411		723		
			702	702			134		159	412		794		
			741	701	156				157	120		729		
			708	248					158	152		784		
	TP-F	IC101	710	741			144		757	155		213		
			251	756			146			111		214		
			711	755					755	116	151	791		
			152	743					736		171	792		
			112	746					745	114	173	793		
			171	752	155	119	114	711	738	104	176	726		
			751	742		112	152	744	122	106	172	727		
			733	758		412	153		749	101	175	728		
			752	757		118	155B	721	737	103	174	161		SW702
			151	749		113	177	722	734	102		162		VR111
TP-A	TP-D			171	761	116	175	723	733	107		781	T101	SW131
				783		115	172	724	761	739		786	L102	
					129	411	151		741			783	T151	
						413	174	726				212	L101	
		A101			124	154	173	728				211		
		IC171				111	178	727				216	X101	
					125	120	155A	729				217		
						103	176					782		
					127	102	171					785		
		IC761	734	761		101	170							
			101		128	104	179							
			731			106								
			732			107								
	KS				123									

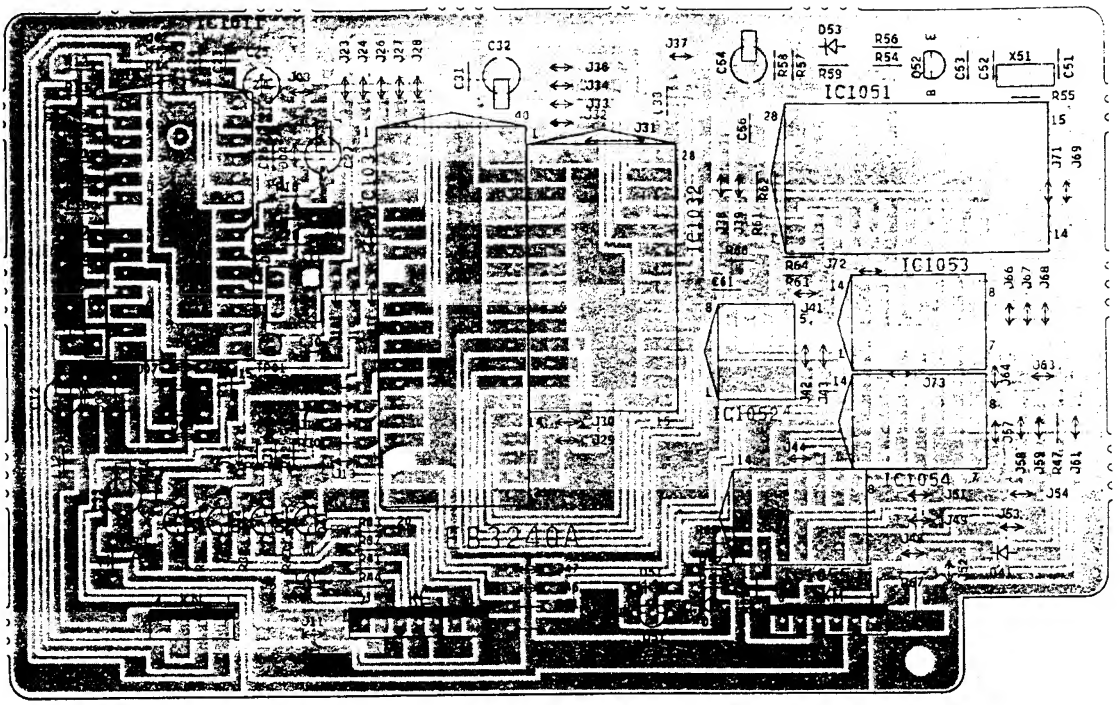
CIRCUIT SIDE



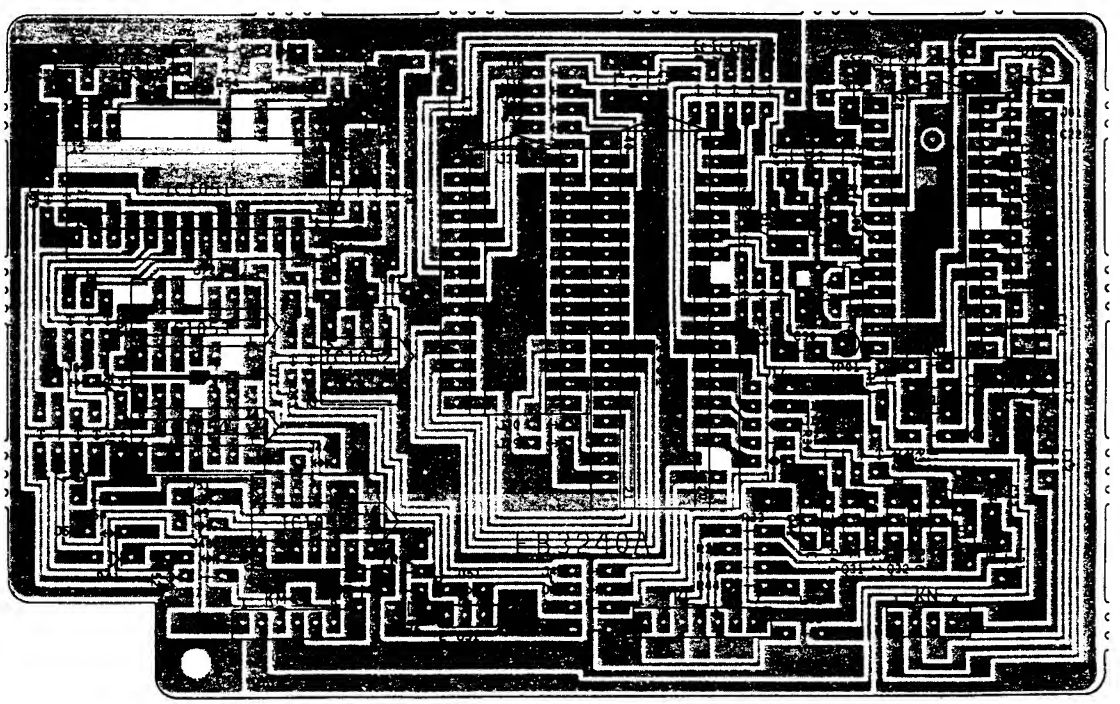
EB3239 (B)

TELETEXT BOARD

COMPONENT SIDE



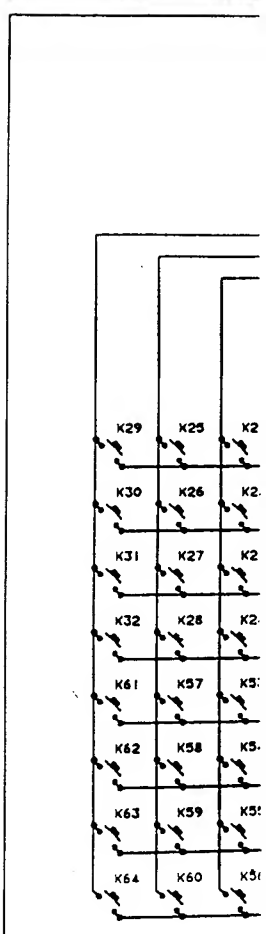
CIRCUIT SIDE



EB3240A

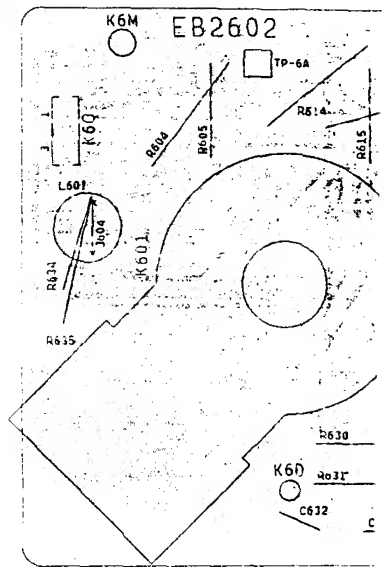
KEY NO.	Hex CODE	TV Function	KEY NO.	Hex Code	TV Function
K 1	00	0	K33	40	----
K 2	01	1	K34	41	----
K 3	02	2	K35	42	----
K 4	03	3	K36	43	----
K 5	04	4	K37	44	----
K 6	05	5	K38	45	----
K 7	06	6	K39	46	TV/MIX/TEXT
K 8	07	7	K40	47	----
K 9	08	8	K41	48	----
K10	09	9	K42	49	RED
K11	0A	1-	K43	4A	GREEN
K12	0B	2-	K44	4B	YELLOW
K13	0C	POS. +	K45	4C	BLUE
K14	0D	POS. -	K46	4D	STATUS
K15	0E	CONT +	K47	4E	HOLD
K16	0F	CONT -	K48	4F	REVEAL
K17	10	CH SCAN	K49	50	UPDATE(CANCEL)
K18	11	NORMAL	K50	51	INDEX
K19	12	FINE +	K51	52	MODE(LIST)
K20	13	FINE -	K52	53	----
K21	14	TV/VIDEO	K53	54	STORE
K22	15	MUTE	K54	55	T.C.P (SUB)
K23	16	VOL +	K55	56	EXPAND
K24	17	VOL -	K56	57	----
K25	18	RECALL/SPECIAL S	K57	58	----
K26	19	TIMER	K58	59	----
K27	1A	COL +	K59	5A	----
K28	1B	COL -	K60	5B	----
K29	1C	STANDBY	K61	5C	----
K30	1D	ALT	K62	5D	----
K31	1E	BR +	K63	5E	----
K32	1F	BR -	K64	5F	----

REMOTE CONTRO



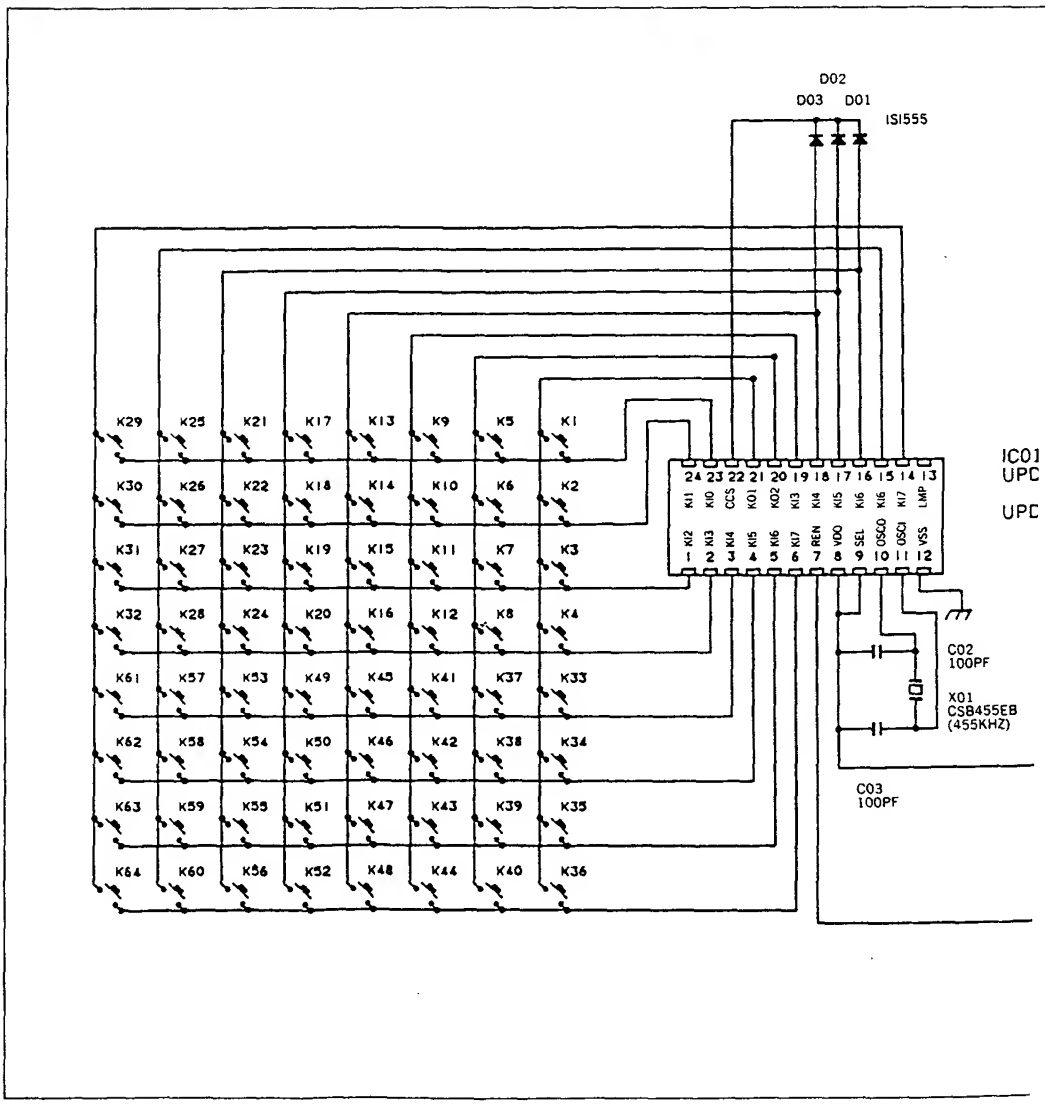
CRT BOARD

COMPONENT SIDE



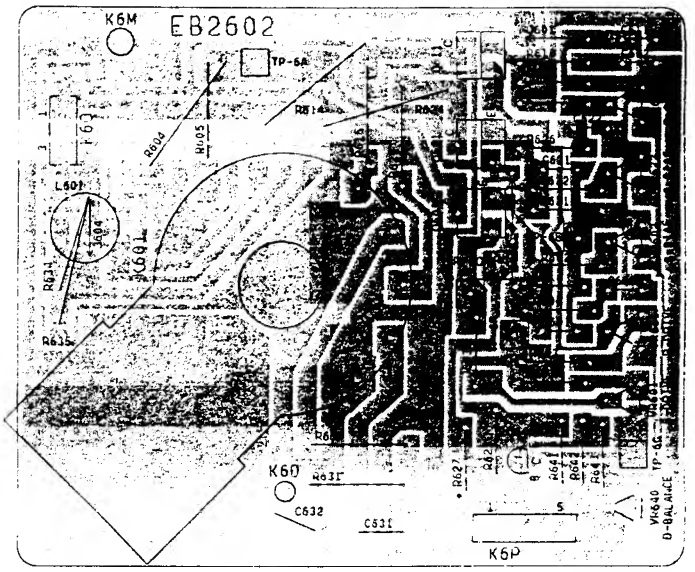
TV Function
- - - -
- - - -
- - - -
- - - -
- - - -
- - - -
TV/MIX/TEXT
- - - -
- - - -
RED
GREEN
YELLOW
BLUE
STATUS
HOLD
REVEAL
UPDATE(CANCEL)
INDEX
MODE(LIST)
- - - -
STORE
T.C.P (SUB)
EXPAND
- - - -
- - - -
- - - -
- - - -
- - - -
- - - -
- - - -
- - - -
- - - -

REMOTE CONTROL TRANSMITTER 4AA4U1T0016--



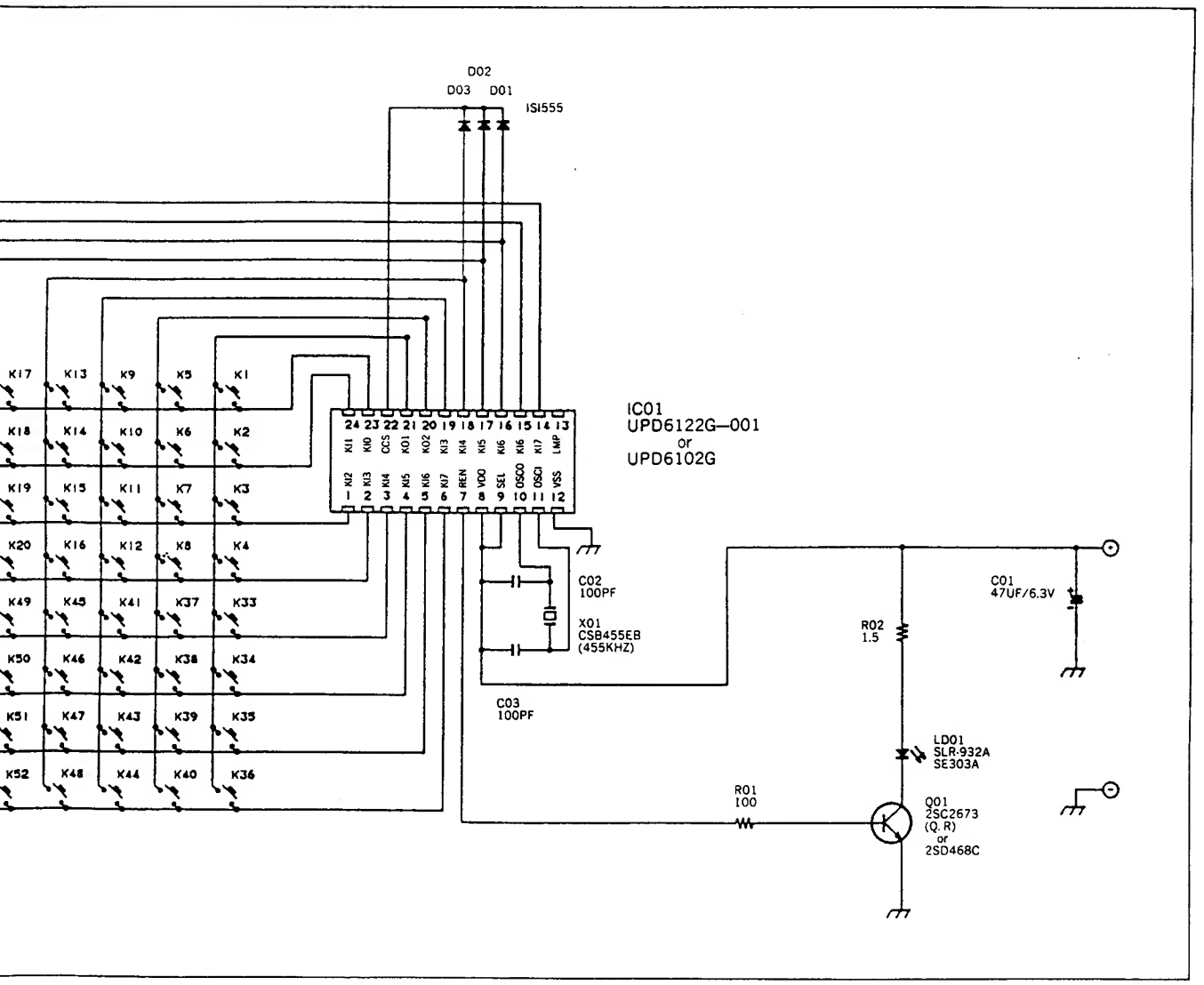
CRT BOARD

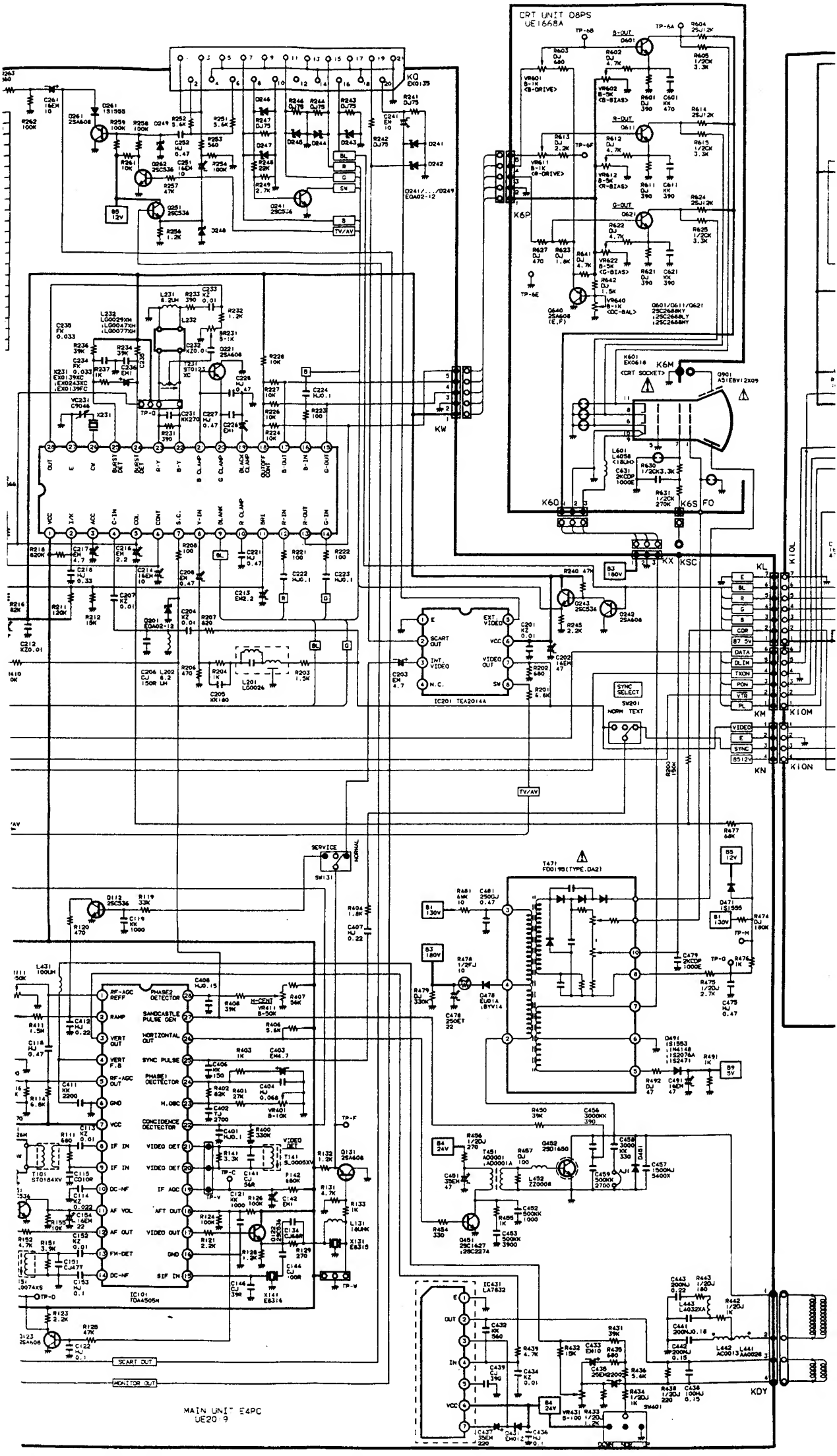
COMPONENT SIDE



EB2602AXA

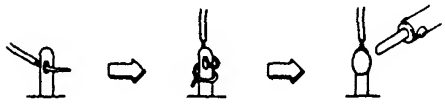
RANSMITTER 4AA4U1T0016--




CRT UNIT D8PS
UE1668A
MAIN UNIT E4PC
UE2019
IC101 TDA4505M
IC201 TEA2014A
IC431 LA7832
SCART OUT
MONITOR OUT
SERVICE
NORMAL
SYNC SELECT
NORM TEXT
TV/AV
K0
K6P
K6M
K6S
KW
KX
KSC
KL
K10L
KM
K10M
KN
K10N
KDY

PRECAUTIONS DURING SERVICING

1. Parts identified by the ⚠ (*) symbol are critical for safety. Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation.
   These must also be replaced only with specified replacements.
   Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers (Insulating Barriers)
   4) Insulation sheets for transistors
   5) Plastic screws for fixing microswitch (especially in turntable)
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



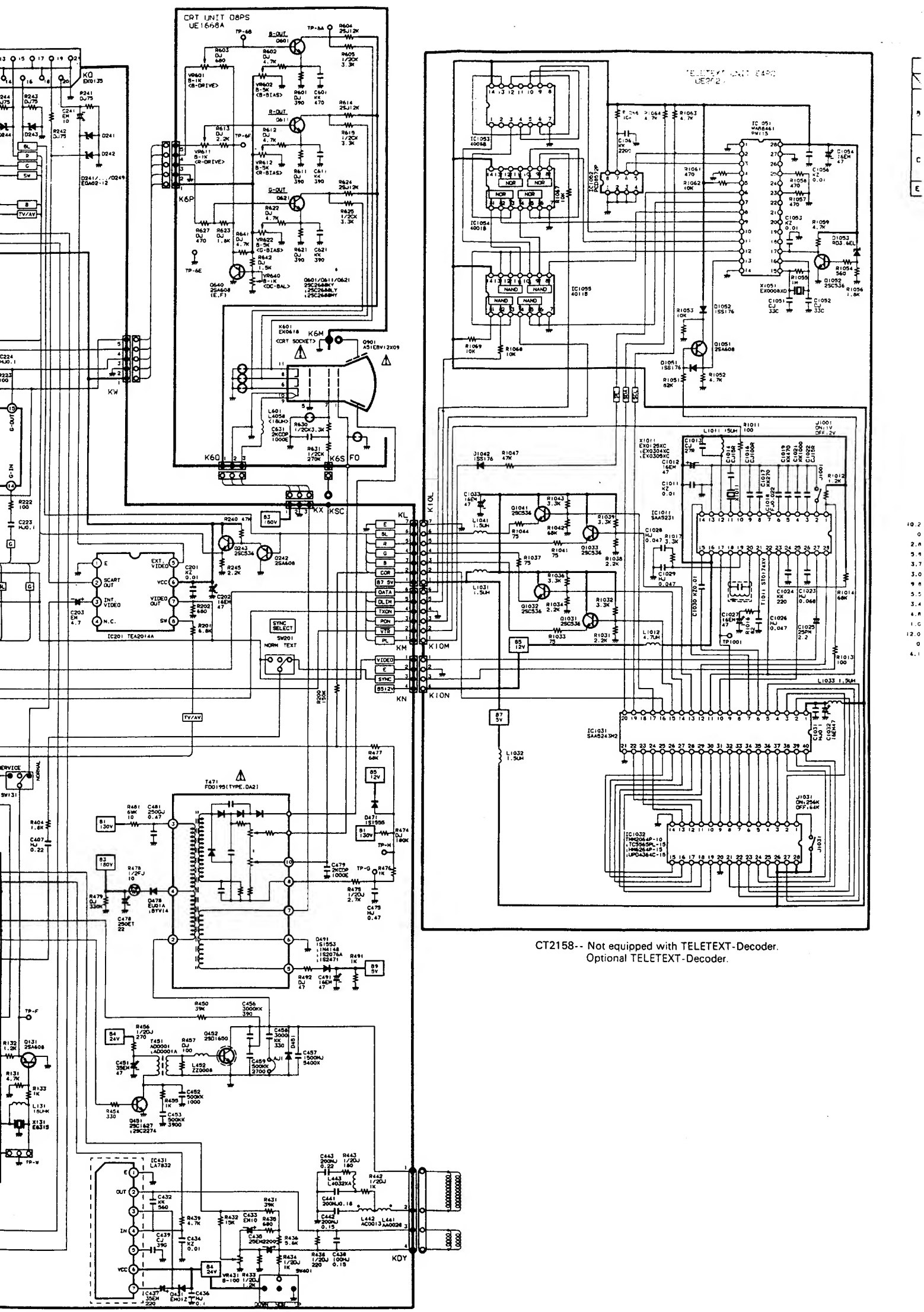
6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).
7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

SAFETY CHECK AFTER SERVICING

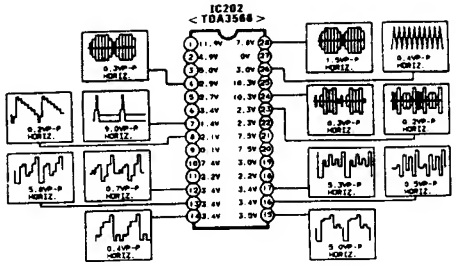
After servicing, make measurements of leakage-current or resistance in order to determine that exposed parts are acceptably insulated from the supply circuit.
The leakage-current measurement should be done between accessible metal parts (such as chassis, ground terminal, microphone jacks, signal-input/output connectors, etc.) and the earth ground through a resister of 1500 ohms paralleled with a 0.15 μF capacitor, under the unit's normal working conditions. The leakage-current should be less than 0.5 mA rms AC.
The resistance measurement should be done between accessible exposed metal parts and power cord plug prongs with the power switch (if included) "ON". The resistance should be more than 2.2 Mohms.

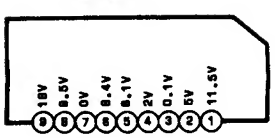
X-RAY RADIATION PRECAUTION

The primary source of X-Ray radiation in a TV receiver is the picture tube. The tube is specially constructed to limit such emissions. For continued protection, the replacement tube must be the same type as the original, including the suffix letter. Excessive high voltage may produce potentially hazardous emissions. To avoid such hazards, the high voltage must be maintained within specified limits. This manual gives details of these limits together with information for corrective action if required. Carefully follow the instructions for the B1 volt power supply adjustment and high voltage adjustment so that the high voltage is maintained within the safe limits.



CT2158-- Not equipped with TELETEXT-Decoder.
Optional TELETEXT-Decoder.





Q391	
	VOLT.
B	5.5V
C	12V
E	5V

Q171	
	VOLT.
B	2.6V
C	12V
E	2V

Q351	
	VOLT.
B	5.5V
C	12V
E	5V

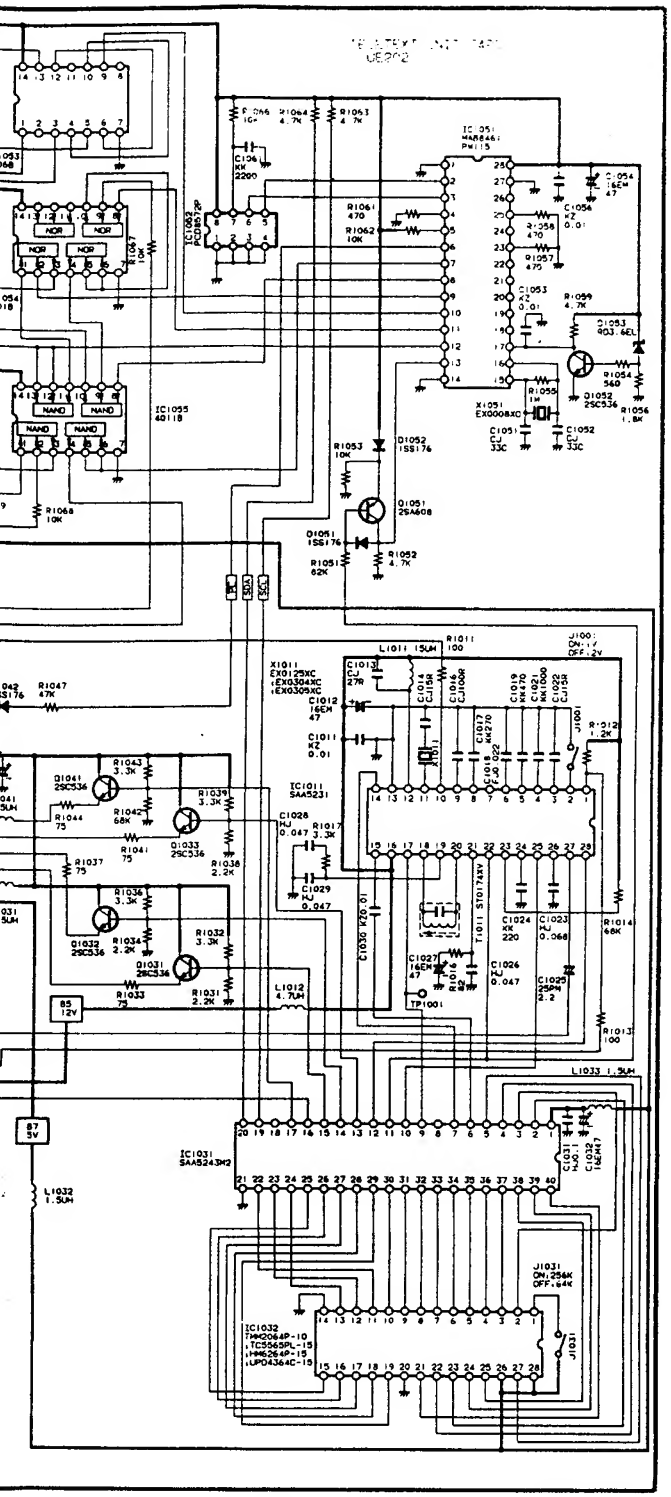
Q151	
	VOLT.
B	0.5V
C	1.5V
E	0V

IC362	
	VOLT.
1	15.5V
2	0V
3	11.8V

Q152	
	VOLT.
B	6.3V
C	0V
E	7V

Q301	
	VOLT.
B	39V
C	7.8V
E	40V

Q304	
	VOLT.
B	0V
C	0.3V
E	0V



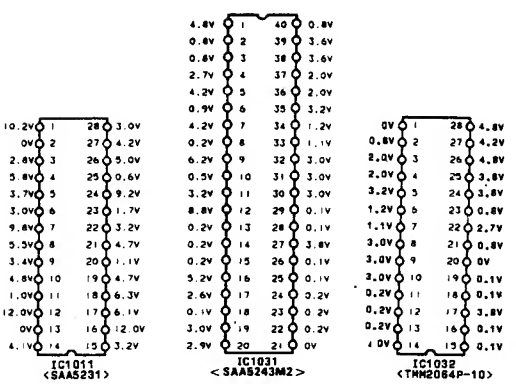
CT2158-- Not equipped with TELETEXT-Decoder.
Optional TELETEXT-Decoder.

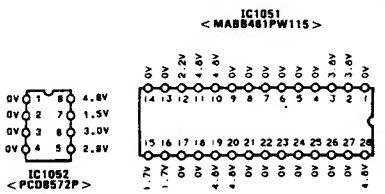
Q601		
	VOLT.	WAVEFORM
B	3.9V	4.2VP-P HORIZ.
C	104V	100VP-P HORIZ.
E	3.3V	-----

Q611		
	VOLT.	WAVEFORM
B	4.0V	4.2VP-P HORIZ.
C	103V	100VP-P HORIZ.
E	3.4V	-----

Q621		
	VOLT.	WAVEFORM
B	3.9V	3.7VP-P HORIZ.
C	100V	96VP-P HORIZ.
E	3.3V	-----

Q640	
	VOLT.
B	0.2V
C	0V
E	0.9V





Q1032	
	VOLT.
B	0.2V
C	4.8V
E	0V

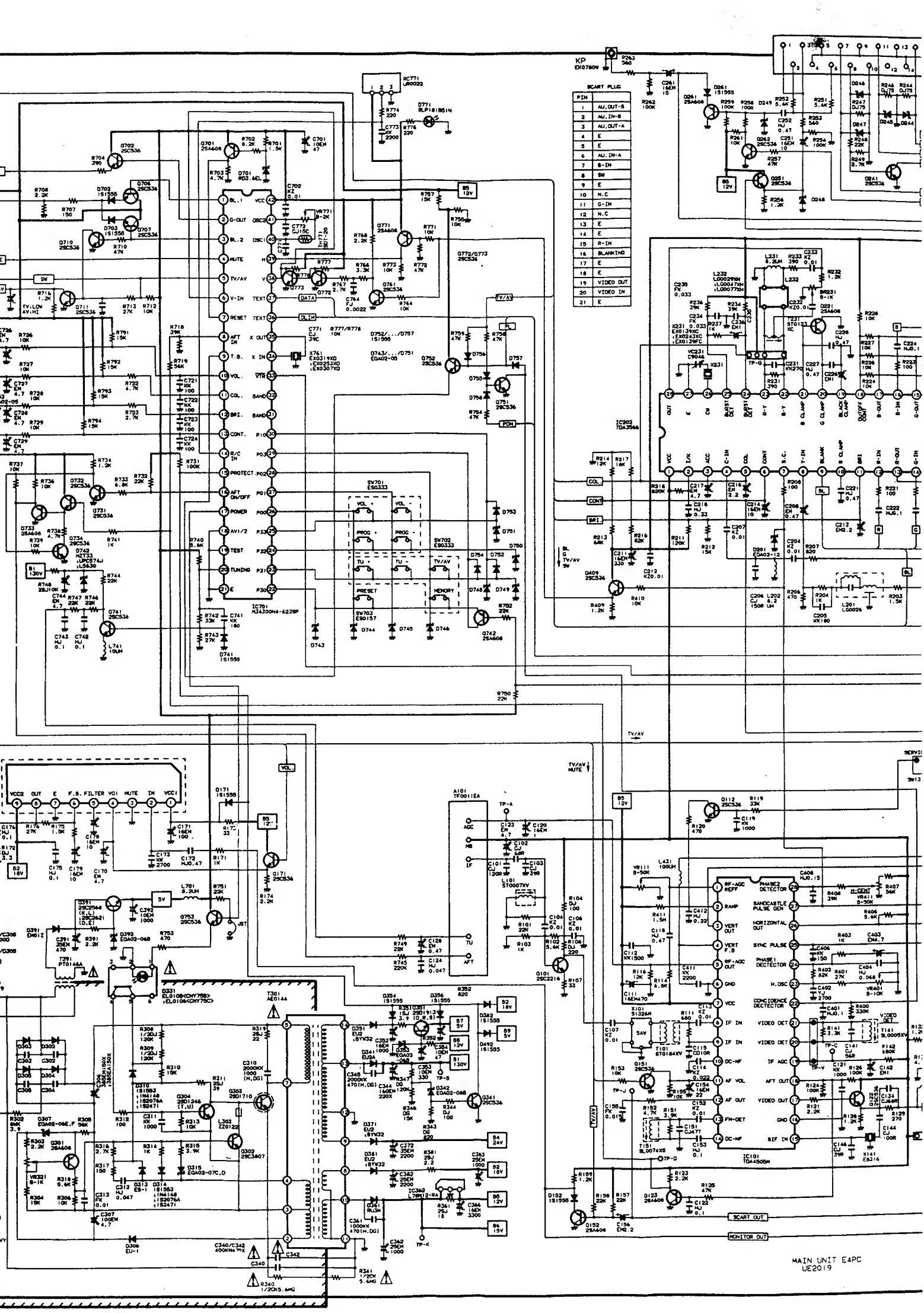
Q1051	
	VOLT.
B	4.0V
C	2.2V
E	4.2V

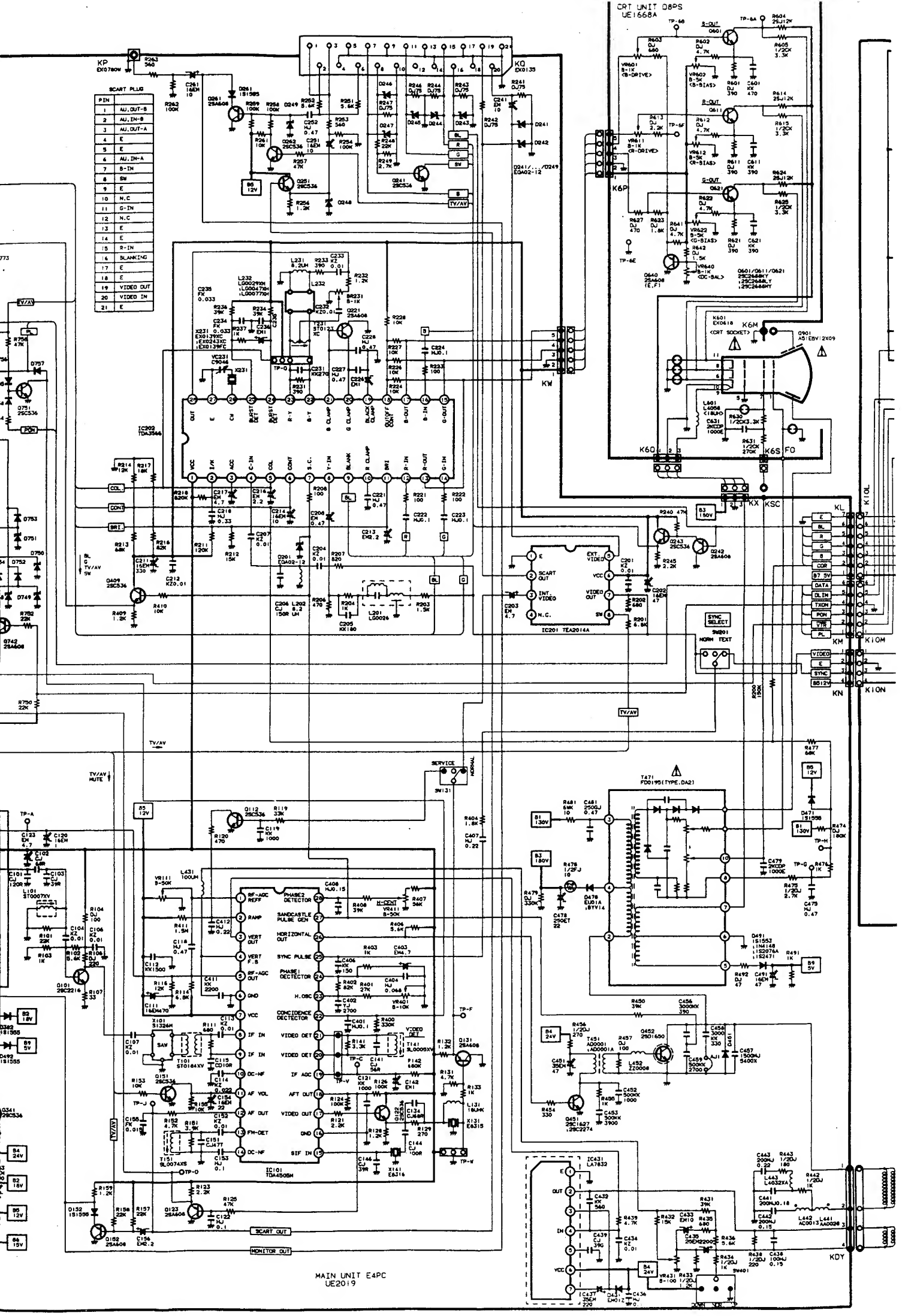
Q1041	
	VOLT.
B	2.6V
C	4.8V
E	1.9V

Q1033	
	VOLT.
B	0.2V
C	4.8V
E	0V

Q1052	
	VOLT.
B	0.7V
C	0V
E	0V

Q1031	
	VOLT.
B	0.3V
C	4.8V
E	0V


SCART PLUG
PIN
1 AU.OUT-B
2 AU.IN-B
3 AU.OUT-A
4 E
5 E
6 AU.IN-A
7 B-IN
8 SW
9 E
10 N.C
11 G-IN
12 N.C
13 E
14 E
15 R-IN
16 BLANKING
17 E
18 E
19 VIDEO OUT
20 VIDEO IN
21 E
IC701 M34300N4-623SP
IC202 TDA3566
IC101 TDA4505M
SW701 ES0333
SW702 ES0333
SW703 ES0157
TV/AV
SCART OUT
MONITOR OUT
MAIN UNIT E4PC
UE2019


CRT UNIT D8PS
UE1668A
SCART PLUG
PIN
1 AU.OUT-B
2 AU.IN-B
3 AU.OUT-A
4 E
5 E
6 AU.IN-A
7 B-IN
8 SW
9 E
10 N.C
11 G-IN
12 N.C
13 E
14 E
15 R-IN
16 BLANKING
17 E
18 E
19 VIDEO OUT
20 VIDEO IN
21 E
IC101 TDA4505M
IC201 TEA2014A
IC202 TDA3566
IC431 LA7832
T471 FD0195(TYPE.DA2)
SERVICE
NORMAL
SW131
SYNC SELECT
SW201
NORM TEXT
SCART OUT
MONITOR OUT
MAIN UNIT E4PC
UE2019

SPECIFICATIONS

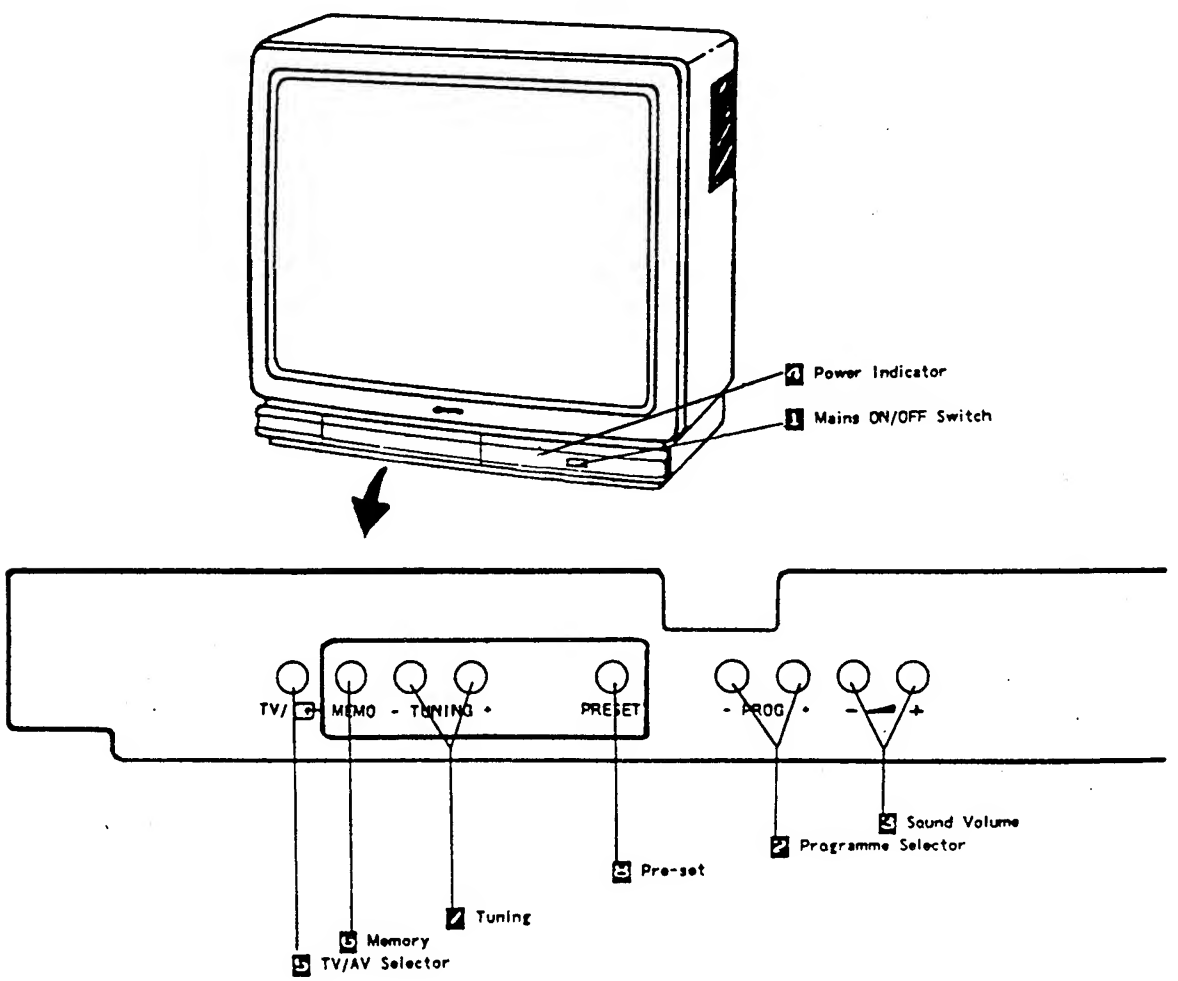
Power source	AC 240V, 50Hz
Power consumption	55 watts
Television system	System - I
Colour system	PAL
Channel coverrage	UHF 21 ~ 69
Aerial input impedance	75 ohms
Intermediate frequencies	Video 39.5 MHz Sound 33.5 MHz Colour 35.07MHz
Audio output	3.0W, 10% distortion

Speaker	5 × 9 cm, 8 ohm
Picture tube	51 cm diagonal, 90 degree Type No. A51EBV12X09
High voltage	25 KV at Zero beam
Semiconductors	49 (55) Transistors 7 (15) ICs
Dimensions	Width 516mm Height 472mm Depth 495mm
Weight	21 Kg
Ext. terminal 21 pin terminal Audio monitor out	 CENELEC standard RCA type

SUMMARY

21" COLOUR TV WITH TELETEXT
All solid state circuitry for stable quality, less power consumption and high reliability. Simplified chassis construction with 1 main circuit board for easy access and servicing. In-line gun, slotted mask picture tube with 90° deflection angle. Convergence-free tube system.
32 broadcast stations in your reception area can be automatically found by the search tuning system. 47 functions infra-red remote control transmitter for TV set. Teletext decoder is built in model CT-2160.

CONTROLS



CHASSIS DESCRIPTION

POWER SUPPLY

The power supply circuit of the E4 chassis is composed of a rectifier smoothing circuit, an oscillation circuit, a control circuit and an output rectifier circuit.
The AC input voltage is full-wave rectified by the rectifier smoothing circuit and an astable DC voltage is generated at both terminals of the smoothing capacitor C306. This voltage is input to the oscillation circuit. The oscillation circuit is provided with a blocking oscillator circuit that switches the switching transistor Q303 ON and OFF and an oscillation frequency and a duty square wave pulse are generated in the input windings according to operation of the control circuit. A square-wave pulse whose size is dependent on the turn ratio of the input and output windings is obtained in the output winding. This is rectified in the output rectifier circuit, and the desired DC voltage is obtained.

IF & DEFLECTION (TDA4505M)

The IF output signal from the tuner passes through the SAW filter, and it is input to pin (8) and pin (9) of IC101. The signal input to the IC passes through the IF amplifier, video detection and video amplifier circuits and is output from pin (17) as a composite video signal. And after this signal is impedance matched at Q122, this supplies the signal to the video and chroma amplifier stages. The input signal from Q122 also passes through the 6.0 MHz trap circuit of X141, and it is input to pin (15) of IC101. The signal input to the IC passes through the SIF amplifier, FM detector, volume control and audio output circuit, it is then output from pin (12) as audio drive signal.
The sync.-separation circuit separates the video signals applied to pin (25) into vertical- and horizontal- sync. signals respectively. The horizontal sync. signal passes through the IC and is applied to the gating circuit, and performs the horizontal oscillation trigger. The horizontal oscillation occurs as a result of the circuit configuration consisting of C402, R401, VR401 and pin (23), and the horizontal free oscillation frequency is adjusts from pin (26). VR411 is for adjustment of the horizontal centring.

The separated vertical-sync. signal from the sync. separation circuit passes through the vertical-separation circuit, and applied to trigger divider circuit. The horizontal oscillation pulse and input vertical sync. pulse are monitored by the trigger divider circuit, and switches to 50Hz or 60Hz system as required, the vertical amplitude is automatically adjusted for 50Hz or 60Hz.
The output signal from the trigger divider of the vertical oscillation circuit consists of R411, C412 and pin (2), vertical drive pulse is output from pin (3). VR431 changes the amount of AC feedback applied to pin (4) and for adjustment of the vertical amplitude.

AUDIO OUTPUT (AN5265)

The audio signal output from pin (12) of IC101 is input to pin (2) of IC171 and passes through the preamplifier circuit and drive circuit, after which it is input to the audio amplifier. The audio amplifier is an SEPP (single-ended, push-pull) OTL type and output to pin (8) to directly drive the speaker.

VIDEO, CHROMA & R.G.B. (TDA3566)

The composite video signal output from the pin (17) of IC101 passes through Q131 and IC201, and it is supplied to pin (8) as the luminance (Y) signal, to pin (4) as the chroma signal.
The luminance signal input to the pin (8) is applied to the luminance amplifier and contrast control circuit, gain control (contrast) is applied by the pin (6) DC voltage, this signal is then input to the matrix circuit. The DC level of the luminance signal can be varied (brightness) by the DC voltage on pin(11).
The chroma signal input to pin (4) passes through the chroma amplifier, saturation control, contrast control, and output amplifier circuit, and it is output to pin (28). The chroma signal output to pin (28) is input to the 1H delay line circuit, and is divided into R-Y and B-Y chroma signals, which are input to pin (23) and pin (22) respectively. The R-Y chroma signal fed to pin (23) is detected by the CW signal which has a phase inversion of 180° every 1H at the PAL switching circuit, and is then taken out to B-matrix circuit as B-Y demodulated output. The R-Y and B-Y demodulated output are matrixed together in the G-Y matrix circuit, and fed to the G-Y demodulator output. The each R.G.B. matrix circuits are mixed the luminance signal and each R-Y, G-Y and B-Y demodulated output to obtain the red, green and blue primary colour signals, and is applied the each R.G.B. amplifier circuits. The signal passes through the R.G.B. amplifier circuit added to the blanking pulse which is input to pin (9), and output to pin (13) as red signal to pin (15) as green signal, to pin (17) as blue signal.

The reference oscillator operates at twice the subcarrier frequency and is phase and frequency controlled by the frequency burst phase of the chroma signal. The oscillator can be adjusted via the voltage of the phase detector output (pin (23)).

VERTICAL OUTPUT

An IC (LA7832) is used for the vertical output circuit in this chassis. The vertical drive pulse from pin (3) of IC101 is input to pin (4) of IC431. This pulse drives IC431, and vertical scanning is performed. In the first half of scanning a deflecting current is output from pin (2) and passes through the following path: Vcc24V⇨ D431⇨ pin(3)⇨ pin(2)⇨ DY⇨ C435 ⇨ VR431/R433. An electric charge is then stored in C435. In the last half of scanning the current path is C435⇨ DY⇨ pin(2)⇨ pin(1)⇨ VR431/R433⇨ C435. In this way, an amplifying sawtooth waveform current flows directly to DY to perform electron beam deflection. Next, in the first half of the blanking period the vertical drive pulse suddenly becomes OFF, and in order to reduce the current flowing to DY, the current path is as follows by the inductance of DY: DY⇨ pin(2)⇨ pin(1)⇨ VR431/R433⇨ C431⇨ DY. Also,when the charge of DY has been dissipated, the current path is vias Vcc24V⇨ pin(6)⇨ pin(7)⇨ C437⇨ pin(3)⇨ pin(2)⇨ DY⇨ C435⇨ VR431/R433, and when the prescribed current value is reached, the vertical drive pulse switches ON. This completes one cycle.

HORIZONTAL OUTPUT

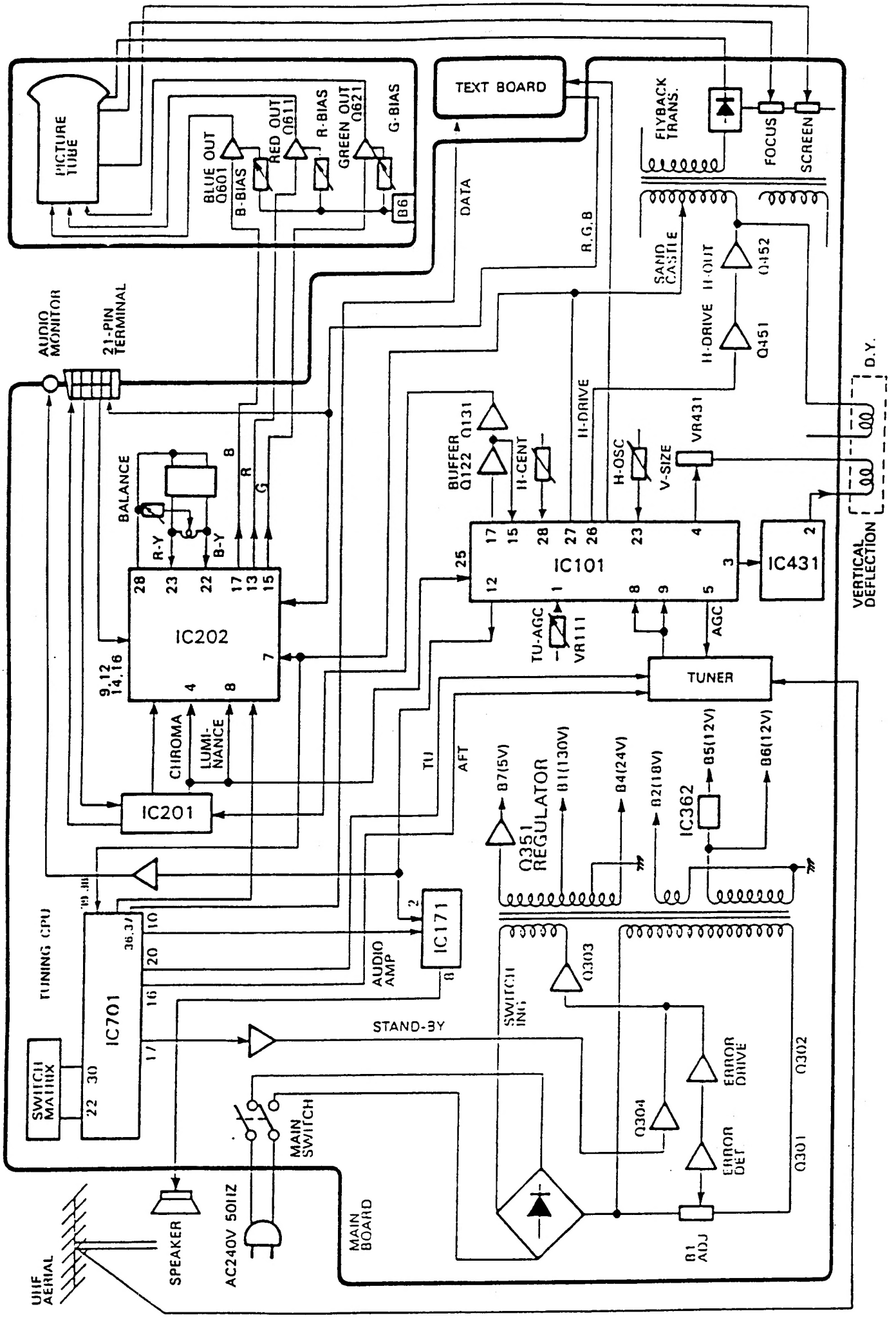
A horizontal oscillation signal is output from pin (26) of IC101 and switches the drive transistor Q451. This switching signal is current amplified by the drive transformer T451 and drives the output transistor Q452. When Q452 becomes ON, an amplifying current flows directly to DY through C443⇨ L442/R442⇨ DY⇨ Q452⇨ GND, and deflection is performed in the last half of the scanning period.

Next, when Q452 becomes OFF, the charge that had been stored in DY up to that point releases a resonance current to the resonant capacitors C457 and C458 and charges them. The current stored in C457 and C458 is then flowed back to DY, and an opposite charge is then stored in DY. This opposite charge then switches the dumper diode in Q452 ON, the resonance state is completed, and an amplifying current is then flowed again directly to DY through the dumper diode. By this means, deflection in the first half of the scanning period is performed, and when Q452 becomes ON at the end of the first half of the scanning period,deflection during the last half is begun, thus completing one cycle.

HIGH VOLTAGE

The 1000-Vpp blanking pulse generated in the primary coil of the flyback transformer T471 is boosted 10 ~ 15 times, and a stable high-voltage pulse superposed with harmonics nine times the fundamental harmonics is generated. This is made into a 20 ~ 30kV DC voltage by using a double-voltage rectifier circuit. Furthermore, the intermediate frequency of the double-voltage rectifier circuit is resistance potential divided and used as the focus and screen voltages for the CRT. This resistance for potential division is unified in the flyback transformer.

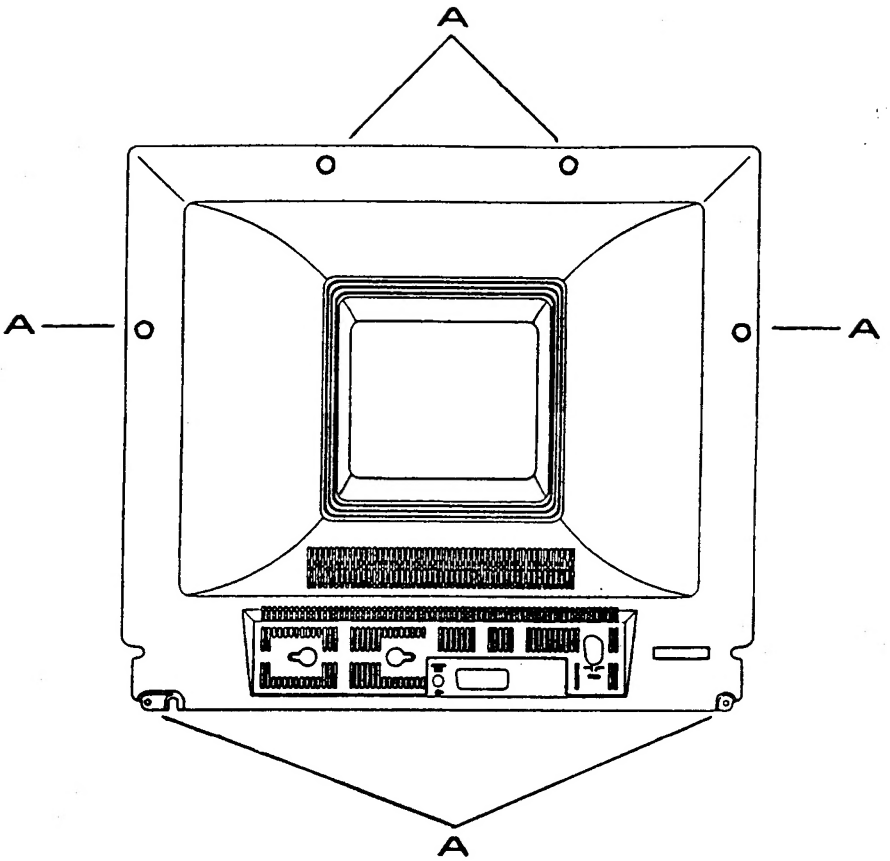
Moreover, the accompanying coils are used to generate the +5V, +12V, heater voltage, and AFT pulse.


PICTURE TUBE
BLUE OUT Q601
B-BIAS
RED OUT Q611
R-BIAS
GREEN OUT Q621
G-BIAS
B6
TEXT BOARD
DATA
R.G.B
FLYBACK TRANS.
FOCUS
SCREEN
SAND CASTLE
H-DRIVE H-OUT
Q452
H-DRIVE
Q451
AUDIO MONITOR
21-PIN TERMINAL
BUFFER Q122 Q131
H-CENT
H-DRIVE
H-OSC
V-SIZE
VR431
D.Y.
VERTICAL DEFLECTION
BALANCE
R-Y
B-Y
B
R
G
IC101
IC431
IC202
9,12 14,16
TU-AGC
VR111
AGC
TUNER
CHROMA
LUMI-NANCE
IC201
TU
AFT
B7(5V)
Q351 REGULATOR
B1(130V)
B4(24V)
B2(18V)
IC362
B5(12V)
B6(12V)
TUNING CPU
IC701
IC171
AUDIO AMP
SWITCH MATRIX
STAND-BY
SWITCHING
Q303
Q304
ERROR DRIVE
Q302
Q301
ERROR DET
MAIN SWITCH
SPEAKER
AC240V 50HZ
MAIN BOARD
B1 ADJ
UHF AERIAL

CABINET BACK REMOVAL

Remove 6 screws (A).

Then draw off the cabinet back.



PICTURE TUBE REMOVAL

Caution:

Do not disturb the deflection yoke assembly on CRT neck. Care must be taken to keep these assemblies intact. Discharge picture tube by shorting the anode connection to chassis ground. (Not cabinet or other mounting parts.)

Remove the cabinet back and chassis.

Place the cabinet face down on a soft surface.

Remove 4 screws (B).

Gently lift out the picture tube and place it on a soft surface.

Install replacement picture tube in reverse order.